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COSTING AND PRICING MUNICIPAL SERVICES

Commonwealth of Massachusetts

EDWARD J. KING, Governor

Massachusetts Executive Office
of Communities and Development

BYRON J. MATTHEWS, Secretary

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Dear Local Official,

Massachusetts municipal leaders have demonstrated foresight and ingenuity in meeting growing municipal needs and managing diminished revenues. You face high borrowing costs, federal grant cutbacks, and property tax reduction. At the same time, inflation, energy costs, and the need to provide quality municipal services make budget preparation a yearly challenge.

With this manual, the Executive Office of Communities and Development is introducing a concept now being pursued across the nation—costing and pricing of municipal services. Cost finding, a practice described and demonstrated in this publication, can be applied to determine the total costs of municipal services, and can lead to the discovery of appropriate areas for cost savings.

Should you decide to increase or institute fees and charges, the manual also contains guidance on determining the best pricing policies for your municipality.

It is my hope that you will find this material to be valuable, and I welcome your comments and questions.

Sincerely,

Byron J. Matthews

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Secretary
Executive Office of Communities
and Development

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Introduction

Proposition 2½ has placed severe restrictions on the traditonal revenue producing sources of local governments within the Commonwealth. National trends are placing an even greater strain on the financial resources available to cities and towns. Recent federal budgets have further reduced the flow of federal dollars to Massachusetts municipalities. Municipal bond offerings have lost much of their competitive edge, driving the cost of borrowing money upward. Inflation has increased local government expenditures by 9.5 percent and revenues by only 4 percent.

As one solution to the fiscal problems the nation's cities are facing, many jurisdictions are planning to increase the property tax to fund expenses. Massachusetts municipalities do not have this option. Massachusetts towns and cities must rely on cuts in services, reductions in the work force, and consider alternative sources of revenue.

One option available to Massachusetts local governments is to diversify the revenue base by making greater use of fees and charges. User fees and charges are one of the fastest growing areas in local government revenues. A recent Joint Economic Committee study estimated that these charges have increased by up to 20 percent on a national basis.

Massachusetts communities should likewise be viewing fees and charges as a major growth area for generating revenue. However, Proposition 2½ clearly limits the amount cities and towns may charge to the extent of the cost of providing the service. Therefore, local government must determine the total cost of the service if they are to establish viable new fees and charges, or increase those that are in existence. Yet, few local governments have attempted to determine the "true" cost of providing service.

The purpose of this manual is to give you the basic components of determining the cost of service. Once the cost is known, it is possble to price public services. While the manual describes various approaches to pricing public goods and services, there are in each municipality distinct public policy issues that must be considered before setting the fee or charge.

Contents of this Manual

A **CHECKLIST** of best management practices relating to costing and pricing is presented. The checklist also serves as an outline to the contents of the manual and as a quick reference, as well as a diagnostic tool, particularly for the non-finance official.

Chapter I, **PUBLIC POLICY ISSUES,** presents the local considerations associated with setting user fees and charges. It presents the components of a revenue plan to enhance public knowledge and support for the community's revenue goals.

Chapter II, **COST FINDING,** presents cost finding principles and uses. It underscores the differences between cost finding and traditional expenditure accounting. Furthermore, it presents the basis for defining a job, activity, or work unit, as well as the elements used in establishing their respective costs. The terminology of cost finding is briefly explained, with graphic illustrations to demonstrate the concepts being discussed.

Chapter III, **PUTTING IT ALL TOGETHER,** is "Now that you know what it is you want to cost out and how to go about it, what is the process to collect and analyze the data?" This chapter provides the description of the process, flow charts, and, perhaps most importantly, sample formats for recording the information you will need.

Chapter IV, **PRICING,** addresses your next question, "Now that we have cost information, how do we set user charges and fees?" This chapter offers a detailed discussion of user fees and charges, the pros and cons, as well as issues to consider in establishing rates.

Chapter V, **MANAGEMENT USES,** brings cost finding concepts to issues of management performance and decision-making. Determining the cost of government activities has a value beyond the setting of user fees and charges. Chaper V provides the framework to determine how well departments and programs are performing, and it offers a basis to consider contracting with the private sector for material, equipment, and services that the local government may currently be providing.

Throughout the manual, we ask you, the reader, to participate. Using the forms and information presented, you will be asked to identify the concepts discussed, determine unit costs for various activities, and establish an appropriate pricing schedule, based on your community's circumstances.

Checklist of Practices and Policies

Listed below are various practices and procedures relating to costing and pricing of municipal services. For each statement, indicate whether your jurisdiction is following the prescribed practice. If your answer is "no" or "not sure," turn to the page listed on the right.

	Does Your Jurisdiction Follow This Practice or Policy?			Reference Page
	Yes	No	Not Sure	
1. A revenue plan describing municipal revenue base objectives has been prepared.	☐	☐	☐	11
2. Community pricing policies consider horizontal and vertical equity.	☐	☐	☐	13
3. Costing and pricing information is compared with similar data for comparable communities.	☐	☐	☐	13
4. An active marketing program has been designed to gain public support for fees and charges.	☐	☐	☐	14
5. Where possible, donations are sought to supplement local expenditures.	☐	☐	☐	15
6. There are well defined practices and policies governing fee collection procedures.	☐	☐	☐	15
7. Payments in lieu of taxes are collected from non-profit institutions.	☐	☐	☐	16
8. Expenditure and expense information is collected on a regular basis.	☐	☐	☐	19
9. Cost finding is undertaken to determine the cost of a service.	☐	☐	☐	19
10. Unit cost is established for various activities.	☐	☐	☐	21
11. Cost Centers are used to identify service areas.	☐	☐	☐	21
12. Activities are broken down by direct and indirect costs.	☐	☐	☐	23
13. Accrued sick leave, vacation, and pension costs are considered when determining cost.	☐	☐	☐	24
14. Impacts on fixed and variable cost are considered when making program investments.	☐	☐	☐	24
15. Major capital purchases are depreciated.	☐	☐	☐	25
16. A team approach is employed to undertake cost studies.	☐	☐	☐	26
17. Cost information is derived from financial records or the current budget.	☐	☐	☐	28
18. Special studies are performed when undertaking construction activities.	☐	☐	☐	30
19. There is a process to convert expenditures to expenses.	☐	☐	☐	34
20. Indirect costs are allocated to various program activities.	☐	☐	☐	34

	Does Your Jurisdiction Follow This Practice or Policy?			Reference Page
	Yes	No	Not Sure	
21. Fees and charges provide identifiable benefits to consumers.	☐	☐	☐	47
22. An inventory of fees and charges is maintained.	☐	☐	☐	47
23. My community charges the full amount permitted under state law for various fees and charges.	☐	☐	☐	47
24. Pricing policies are designed to control demand at "peak" hours.	☐	☐	☐	47
25. The establishment of a fee or charge is weighed against social benefits.	☐	☐	☐	50
26. Distance and density factors are considered when setting fees and charges.	☐	☐	☐	50
27. Rate structures consider marginal cost.	☐	☐	☐	50
28. Municipal enterprise funds are used to account for self-supporting activities.	☐	☐	☐	52
29. Internal controls are established to handle and protect fees collected.	☐	☐	☐	54
30. Unit costs are monitored on a regular basis.	☐	☐	☐	56
31. Cost data is used at budget preparation time.	☐	☐	☐	57
32. Cost data is used when considering contracting out for public services.	☐	☐	☐	57

I. Public Policy Issues

Reliance on the property tax to fund municipal services has been a fiscal "fact of life" in Massachusetts for many decades. Passage of Proposition 2½ has required an arduous budget cutting process to meet the law's requirements, and communities must adjust to the significant and permanent loss of auto exise revenues and property tax receipts. The state legislature has provided new means for communities to raise revenues. The state budget (Chapter 351 of the Acts of 1981) sets new guidelines for many fees and permits issued at the local level, and allows municipalities to assume responsibility for collection of parking fines. Communities seeking to develop a reasonable and reliable policy for identifying and implementing new revenue sources have already begun to examine their revenue raising potential and have started to develop fiscal plans with more reliance on non-property tax revenues.

Developing A Revenue Plan

To guide the process of expanding the municipal revenue base, a revenue plan should be established. Designing a revenue plan will be one of the most challenging responsibilities facing local officials in the coming years. It will require examination of past practices, level of resident support for local services, and exploration of how to apply a workable and equitable pricing strategy to municipal activities. To establish and maintain an effective revenue policy, municipal leaders must be able to answer questions regarding: equity and fairness; dependability; administration and collection costs; and, the effect of the plan on various populations in the community (low income, elderly, youth). Furthermore, the revenue plan must be aligned with the municipality's public policy goals.

The concepts of costing, pricing, and maximizing the new *sources* of revenue underscore the significant shift in the methods of funding service delivery in local governments. Program costs must be weighed against the benefit to be derived by the general public or a limited clientele. Furthermore, as local officials become increasingly cost conscious, they must make choices about the type, scope, and method of delivery of the services to be provided.

Why Cost and Price Services?

Proposition 2½, inflation, federal cutbacks, and a growing perception that the governments' role needs to be limited has put increased demands on public officials. To meet these demands, local officials must set into motion practices and procedures to accurately determine the "true cost" of services and establish fair pricing policies. There are a variety of arguments that support the concept of costing and pricing public services.

1. *Shift reliance from the property tax to provide financial support for service delivery.* This is the most easily recognized and expected aim. If service can become, in whole or part, self-sustaining, the pressure on the property tax is reduced. The property tax becomes one revenue alternative, not the only alternative.

2. *Provide service based on adequate knowledge of need and demand.* The willingness of citizens to pay for a service is a good indication of their demand for the service. It is, of course, not the only indicator. However, by pricing public services, the municipality is demonstrating the need to diversify its revenue base, and provide those services supported by the community, as demonstrated by the residents' willingness to pay for them.

3. *Bring management orientation to department operations.* Fiscal constraints and "business-like" operation may spur a number of management improvements, such as: productivity; time management; better organization and control; and, the establishment of organizational objectives based on manpower, equipment, and available resources. Accurate financial control will be an ongoing departmental responsibility. Also, if departments operate on a self-supporting basis, there may be a greater incentive to allocate resources efficiently and economically.

4. *Establishes local understanding of the financial limitations of the local government.* Costing and pricing activities are a strong signal to the public that there are financial limits to what government can provide. If the public wants more services, it must be willing to pay for these services. Furthermore, it may underscore the essential services that benefit the entire community and those that have limited public benefit and constituencies.

The application of user fees and charges is growing in acceptance as is public awareness that a single source of local revenue—the property tax—can no longer support municipal operations. Because there may be public resistance to new ways of doing things, municipal officials must be able to justify and gain support for the costing/pricing approach. To facilitate local capacity to bring about this change, this manual provides practices and procedures to guide both the policy and management decisions that must be made to implement pricing strategies.

Public Policy Concerns

There are a number of concerns local officials may have when establishing fees and charges. Clearly, citizens are concerned with how much they will have to pay. Beyond this, public officials must consider the following:

- How will this revenue alternative relate to community needs and priorities?
- Will the fees and charges be perceived as fair?
- Who is the market for our service?
- Is it desirable or possible to aim for full cost recovery?
- Will the revenue source be dependable?

The concept that will attract most citizen interest will be the fairness, or equity, concern. Those designing the revenue strategy at the local level need to address the equity issue as a starting point to discover both the potential and limitations of new local revenue sources. Issues of equity include:

- Who will pay?
- How much will they pay?
- Should the full cost of service be paid by those who use it?

These are difficult questions, and answers will be dependent upon: (a) the type of services provided; (b) its potential to generate new revenue; and, (c) past community practices.

Who Will Pay?

One test to apply to a potentially new or increased fee or charge is to determine the beneficiary of the service.

Individual Benefits

If the service provides benefits to a single user, with no community benefit, there is usually more opportunity to apply the full cost of the service to the user. There are many situations where local governments perform a service or function for individual benefit. Some of these include:

- certified copies of birth, death, and marriage certificates;
- maps;
- recreation equipment rental;
- meeting rooms rental;
- alarm system hook-up and maintenance charge.

Many communities provide these services for a modest charge. This charge may not fully take into account attendant labor, overhead, capital, or replacement costs. Therefore, it is necessary to examine the full cost of providing such services. Fees of this type should recover most, if not all, costs since the service benefits the individual rather that the entire community.

Group Benefits

There are services that benefit groups of individuals and have an indirect community-wide benefit. Several examples below illustrate such services:

- tennis instruction, or other youth recreation programs;
- elderly transportation services; and,
- parking facilities at shopping areas.

If youth can participate in structured and supervised activities, the incidence of vandalism, or other anti-social behavior may be curbed; if the elderly have transportation downtown, the city's economy benefits; and parking facilities that are convenient to the user may enhance city revenues through parking meter fees, as well as contribute to the economy of the business district.

Community-wide Benefits

Charges and fees may also be paid for services which benefit the entire community. A municipality's decision to provide rubbish collection, or public water and sewage systems, reflects the benefits to the community of providing a safe and sanitary environment for residents.

How Much Will The Public Pay?

How much people pay for services is the second part of the equity question. To achieve a fair and balanced pricing schedule is most difficult. There are three basic options available:

- Charge everyone the same amount.
- Set a charge based on type or class of user.
- Base the fee on the ability-to-pay.

The following brief examples demonstrate the applicability of these approaches:

Charge Everyone the Same Amount

Adult library card fees are usually uniform; all residents wishing to use the library pay for a library card. The price of the card is not based on usage; the same fee is collected from those who visit the library frequently and those who use library services occasionally. The task of establishing an elaborate fee structure would be time-consuming and potentially irritating to patrons. The flat fee is easiest to collect and administer, and although not perfectly equitable, allows the library to maintain a level of service addressing a broad spectrum of community needs and interests.

Set a Charge Based on A Type or Class of User

Certain services, such as trash removal, cost more to provide to commercial users than residential users. Pricing policies should take into account the level of effort necessary to deliver the service to particular types or classes of users. The community may wish to establish fees that encourage use by particular groups, such as the elderly or youth.

Base the Fee on the Ability-To-Pay

The town offers a quarterly health clinic for infants and young children. A sliding fee scale is established to encourage proper health care and provide vaccinations. Although all children receive the same basic services offered, the fee is based on ability-to-pay, not on the type of treatment. The goal of maintaining the clinic to provide medical care supersedes the aim of generating increased revenues. Fees are nominal to maintain the service and encourage use, and offer treatment to those who could not otherwise afford it.

Applying an identical charge across the entire user population is an excercise of *horizontal equity*—everyone pays the same amount. By creating a fee structure which promotes horizontal equity, local officials seek to collect a uniform amount which spreads the service costs among all users; in some cases, this approach may be both rational and appropriate (e.g. library cards). However, establishing the same rate for a certain service may not properly distribute the real cost to all users. A flat rate sewer charge means that those residents at some distance from the sewage treatment plant pay the same amount as those residents quite close by. The same charge may **look** fair (everyone receives service, everyone pays for it), but does not reflect the true cost of delivery since the community expends more dollars to provide the service as development spreads to new areas.

Some revenue sources demonstrate the principle of *vertical equity*—costs are distributed among persons based on differing levels of income (ability-to-pay) or differing levels of consumption. In our clinic example, the fee schedule established is based on ability-to-pay. Another example would be water and sewer rates, where the charges are based on how much water each user "consumes".

Should the Full Cost of Service be Paid by Those Who Use It?

Community policy plays a vital role in determining which services should be priced, and how much can be charged without upsetting residents' expectations of community services. Priority should be placed on the potential "big ticket" items, such as water, sewer, refuse collection, and electricity (if provided by the municipality). However, local concern may focus initial attention on other services which are presently "free" or are offered below cost.

Certain groups who have always used a "free" service may not be able to take advantage of the same service if the new fee set does not acknowledge their ability-to-pay. Municipalities that have provided recreation, cultural, or social programs for free or at a modest cost may price the service "out of reach", and discover that the services or programs are not used. Thus, municipal activities may not be serving their intended audience. Depending upon community circumstances, setting of fees with certain differentials (e.g. swimming pool charges with a lower rate for children under 12) may be more acceptable to community residents than a standard uniform charge because this approach meets broader community objectives.

Pass-Through Payments

Certain fees and charges, while assessed on a particular service user, are actually passed on to others. Pass-through payments can result in various consequences. For example: if the community charges a fee for ambulance service, the full or partial cost may be passed on to the user's insurance company. With an aggressive collection system, the municipality can meet the expenses of the ambulance service with limited financial impact on the individual user. When designing the alternative revenue plan, officials should be cognizant of who actually pays, not just who receives the bill.

Comparability

When an alternative revenue plan is being contemplated, care must be taken when comparing user fees and charges with those of a neighboring community or jurisdiction of similar size. One may assume that user fees and charges should probably be quite similar. However, there are a number of variables that make the cost of an activity higher or lower in a comparable jurisdiction. Accounting practices, pay scales, age of equipment, volume and level of service, are just a few elements that distort attempts to compare fees and charges among communities.

However, comparability is important when the community is in a competitive position with its neighbors to attract and retain business and industry. An industry selecting a new location will consider the cost and availability of public services as well as other community factors. If fees are too high and numerous in comparison to the surrounding area, the community's competitive position can be adversely affected. Finally, keeping fees and charges comparable will avoid perceptions by residents that they are paying significantly more than residents of other communities for a similar service.

Intergovernmental considerations may also arise in developing an alternative revenue plan. For example, if a municipality maintains a park and recreation area and raises the fees (entrance, parking, picnic table rental, etc.), consumers may choose to use a nearby state facility if its cost is lower. Of course, consumers can be influenced by factors other than cost (e.g., availability of parking, cleanliness, access to highways); however, if the municipality is not cognizant of this possibility when the decision to raise fees and charges is made, revenue may fall appreciably short of local expectations. Thus, the actions of others will influence decisions regarding local activities.

Community Priorities *vs.* New Revenue Potential

The public policy priorities in each community also affect deliberations on increasing revenue sources. New strategies to achieve increased revenues may contradict established public policy aims. For example, if the fire department offers a free safety inspection to homeowners to encourage appropriate fire prevention measures, a charge may discourage homeowners from participating, and lead to adverse public safety consequences.

Limiting Unnecessary Use

Setting a fee can also be used to lessen inefficient or wasted use of community resources. If a police or fire department has offered assistance to those locked out of homes or cars free of charge in the past, instituting a fee for this discretionary service may discourage individuals from relying on the service, and prompt citizens to give more thoughtful attention to protecting their homes and cars. In this particular instance, the fee is instituted recognizing that it is not a big "money maker", but an attempt to limit the discretionary assistance previously provided by public safety personnel. Because many services are seen as "free", citizens may overuse the service. If there is a fee or charge, unnecessary consumption will be better regulated.

New revenue plans undertaken with recognition of municipal service goals should result in a plan which does not contradict resident concerns and expectations. Note that charges which discourage use may increase the cost per user, and make cost recovery more difficult. Moderate fees may sustain or increase service use, make the community more attractive to new residents and businesses, and deliver services that meet identified community priorities.

Examining Revenue Raising Potential

One of the most important factors influencing the creation of a new or expanded alternative revenue plan is the expectation of increased revenue flowing to the municipal treasury. An examination of revenue sources should identify answers to the following questions:

- Is the revenue source dependable?
- Can the revenue source "keep pace" with inflation?
- Should there be full or partial cost recovery?

The first guideline for answering such questions is provided by Chapter 580 of 1981 (Proposition 2½):

> "No city, town, county, district, public authority, or other governmental entity shall make any charge or impose any fee for goods provided or services rendered in excess of the costs of furnishing such goods or providing such services."(M.G.L. C.59, S.20A, new)

Thus, local officials may not charge more than it costs the municipality to provide the service, and must keep adequate documentation on all costs associated with the service. In designing the fee/charge structure, local officials should take care to avoid instances of arbitrary or inconsistent application of the cost finding data used to establish rates.

Although the potential to raise new revenues at the local level appears attractive and will shift some service costs from the property tax, local officials must develop guidelines to determine how much money can be raised, and how reliable such new revenue sources will be. The guideline should take into account the following factors:

Dependability is a basic criteria in the design of the revenue policy. Fees and charges which will produce a steady source of income throughout the year may be more worthy of implementation than discreet services which have a limited seasonal use or are used too infrequently to provide reliable revenues.

Flexibility, or the potential to keep pace with inflation, is a bit harder to achieve, given the statutory limits on many local licenses, fees, and permits. However, for those services performed by the municipality which are high cost and/or labor intensive, municipal officials may establish a yearly review procedure to determine if charges for the service accurately reflect the cost of providing it.

Capability of the fee or charge to generate revenues equal to the cost of service is essential if one of the principal aims of the policy is to guarantee, where possible, full cost recovery to the municipality. The fees and charges should produce the funds necessary to sustain both the service and the quality of the service delivered. One of the continuing debates at the local level will be decisions regarding charges for service which will provide partial, rather than total recovery.

Decisions regarding full vs. partial recovery will differ in each community depending upon a variety of circumstances. While one community may consider recreation as a program able to be maintained through fees and charges, another community's recreation program might deteriorate or face the possibility of termination if only fees and charges are used. Local officials, in examining the range and variety of programs offered, should consider the potential of partial or full cost recovery based on the public policy issues discussed in this Chapter.

Marketing

It will be necessary to have public support if user fees and charges are to be a viable revenue alternative. Marketing will be a necessary part of any program. Although the elaborate advertising campaigns used in the private sector are neither available nor appropriate to the municipal situatuion, local officials must lay the groundwork for community acceptance and understanding of a new fee structure.

The key to success will be how well new or increased charges can be justified. Local officials may prepare exhibits which:

- show the cost to the government of providing the service;
- compare charges to those in neighboring jurisdictions;
- present past and projected service demand; and,
- present estimates of new revenues generated.

Your revenue goals will be more readily sold if estimates are reasonable, and represent a conservative rather than overly buoyant picture of expected new dollars. There may be a period of trial and error as initial consumer demand is measured in the first months of the new plan's implementation. Monitoring may reveal areas where the fee schedule can be raised or lowered in future years dependent upon up-to-date use and cost information.

Getting the word out as the plan is being designed can aid in gauging community reaction. Also, preparing a press release and posting signs in municipal offices prior to the implementation of the new fee will lessen complaints about increases catching residents "by surprise". For charges that will affect a large number of community residents (youth center activities, trash collection), mailing flyers or notices to all households will ensure that all residents receive the necessary information. Press releases to local newspapers can also ensure widespread knowledge of new rates or charges. In several communities, flyers have been delivered by the Boy Scouts or other volunteer organizations to avoid large mailing costs. However, this approach does require a fair amount of organization and careful monitoring to guarantee delivery to all households. Although not required in all instances, public hearings may prove to be an effective citizen pariticipation device.

Marketing efforts also influence the expectations of the user. When citizens pay new or increased fees for use of municipal facilities (pools, parks, parking lots), they may have little tolerance for litter, inadequate plowing, or continual changes in hours of operations. Prepare a marketing strategy which can be carried out given existing resources and personnel. As in private industry, the failure to deliver what is promised will result in returns diminished by "bad press". The decisions made on what services will be provided, and how they will be provided reflect on community image. High fees and lack of adequate service delivery are a potentially embarassing combination, especially in those communities seeking to attract new business or other development. Thus, a marketing approach must recognize and convey a realistic picture of available services, justification for costs, and thoughtful attention to community needs and concerns.

Donations

The potential for donations to support certain local activities is another approach worthy of pursuit. Large national corporations located in the community may have programs that support local recreation, arts, or social events. Donations of cash, space for special programs, or personnel (e.g., donation of time to review electronic data processing arrangements) may be available. Other business concerns might also be approached—a printer may have paper that could be devoted to a community art class instead of being discarded; a moving company may have crates no longer usable for heavy moving, but could be used for storage of supplies. These smaller donations may appear to be "not worth the effort" at first glance, but an enthusiastic "scrounging team" might come up with some real finds! Many people will welcome the opportunity to contribute to activities by giving useful items rather than a monetary offering. The Chamber of Commerce or other local business groups could organize and direct such efforts as a community relations project.

Administration and Collection

The examination of new revenue proposals necessarily includes answering questions of collection and administration procedures.

- When will fees be collected?
- How will fees be collected?
- Will one office coordinate collection procedures?
- Is additional workload for staff anticipated?
- What will be the costs of collection?

The scope of the revenue plan will provide some of the answers to these questions. If the community is raising existing fees and charges, and significant new demands are not anticipated, the administrative procedures in place may be adequate. However, if new fees and charges are instituted, an examination of workload capacity, method of collection, and costs of collection is in order.

The collection of fees should be reasonably convenient for both the user and the municipality. Fees should be collected when and where the service is provided, if possible. Certain recreation programs may offer a season pass, which may be available at an office location (golf, tennis, swimming pool); however, onsite collection will have to be considered if there is significant daily or non-resident use, or multiple entry points. For other sources, a billing schedule can be established for monthly, bi-monthly, or quarterly periods. Consider staff capacity for significant additions to the workload, especially in those areas where a major change in procedures is undertaken (e.g., charging separately for rubbish collection).

Procedures should ensure uniform collection. A "master" fee schedule listing all fees and exceptions (e.g., special rates for children, additional charges for weekend use, etc.) will be an invaluable aid to all personnel with collection responsibilities as the new plan is put into effect.

If additional personnel will be needed to administer or enforce collection procedures, revenues received will be somewhat offset by wage or salary considerations. However, this situation should not deter the establishment of a collection program, if gains "over the long run" appear to be promising. Sufficient personnel will help to guarantee efficient and timely collection, and avoid large backlogs of bills to be processed

In those cases where it is not possible to collect the fee until after the service has been rendered (i.e., police assistance to persons locked out of homes or cars), a bill should be presented. If the bill is not paid, there should be a prompt follow-up (within 30 days). For such discretionary services, charges may become more difficult to collect if long period of time passes before the individual receives a bill.

Look twice at fees or charges that may become troublesome to collect or enforce. It is likely that the duties of existing staff cannot be expanded greatly to "track down" unpaid fees and charges. Close examination may reveal that cost of collection and account reconciliation is greater than the revenue collected. In order to limit delinquent accounts, communities may wish to offer incentives such as discounts for prepayment. Conversely, penalties can be added to late payments.

Most revenue plans are prepared with the expectation that sizable new revenues will be generated. To assure that results are in line with projections, collections should be monitored, especially in the early stages. An established review procedure, including periodic reports to the chief elected officials, can help to track revenues received and compare actual receipts with preliminary estimates. Such reports may also help to identify areas where collection procedures need to be strengthened, or fee and charge schedules modified to meet increasing or diminishing service demand.

Public policy considerations may dictate the passage of a comprehensive bylaw or ordinance which outlines fees and charges. Such a bylaw will be strengthened by providing for the periodic evaluation of all fees and charges. For example, a town or city may review one-third of the alternative revenue plan each year, thus allowing for the review of each item every three years. If costs associated with the service have risen, or service demands have changed, fees can then be adjusted to reflect new circumstances. Since many of the license and permit fees established by the General Court have a ceiling or maximum limit, local officials should consult the Massachusetts General Laws for guidelines.

Fee Evasion

Local officials should consider the potential for fee evasion when designing new revenue strategies. Fee evasion has both unfortunate monetary and public policy consequences. If the fees and charges set are ignored or avoided by the public, expected new revenues will not materialize and local public policy aims may be jeopardized.

For example, a dramatic rise in rubbish collection charges can lead to adverse community consequences—dumping on the back streets or conservation areas, increased cost to the community to control illegal dumping and enforce penalities, and increased dangers to public health. Instituting a strict fine for illegal dumping may make up some of the costs; however, the community's reputation as clean and safe will be tarnished. The method of establishing proposed fees and charges, as well as the collection procedures should contain the necessary safeguards to ensure uniform compliance, and avoid conditions that may cause fee evasion.

Other Potential Revenue Sources

Not all new revenues must be generated from fees and charges to individual taxpayers and residents. Listed below are two alternatives:

Payment in Lieu of Taxes

Certain nonprofit (tax-free) institutions use municipal services, and in lieu of tax agreements with such institutions may be the opportunity for municipalities to receive payment for services rendered. In Cambridge, where in lieu of tax agreements have been in force for many years, the city and the major nonprofits (Harvard University and the Massachusetts Institute of Technology) have agreed to a formula based on .052 cents per square foot of property.(City of Cambridge, Massachusetts, *Annual Budget*, 1981-82, p.III-41.) Although each community situation is different, municipal officials need to begin dialogue with major nonprofit users of municipal services so that current inequities of certain users receiving basic services (water, sewer, police, and fire protection) without contributing to the operating costs of the municipality can be addressed. The town counsel/city solicitor can provide the legal guidance necessary to negotiate such agreements.

Betterments

The municipality may also be able to fund improvements for certain property owners by imposing or increasing betterment assessments—a tax imposed on a parcel or parcels of land within a limited and determinable area as a result of public improvements made to such a parcel of land. Examples of betterments include extensions of water systems, new sidewalks, new sewer systems, and street widenings. Betterments can be assessed when a specific, identified area receives a benefit or advantage above and beyond the general advantage to the community resulting from a public improvement. Betterment assessments are addressed in Chapters 79, 80, and 80A of the Massachusetts General Laws. Betterment assessments are applied as a result of a formal vote or order for laying out or construction of public improvement stating that betterments are to be assessed. The use of betterment assessments directs the cost of the service to the identified beneficiary (user), and avoids having all property taxpayers pay for improvements which do not have community-wide benefits.

Getting Started

In the the initial stages of formulating an alternative revenue plan, local officials will need to examine:

- applicable license, permit and fee statutes of the Massachusetts General Laws;

- policy implication of various fees and charges;
- local bylaws/ordinances for fees previously established at the local level;
- potential for change in service demand if fees and charges are instituted or raised; and,
- the elements necessary to determine the cost of service.

In general, state law usually sets a standard fee for certain regulatory activities without consideration of fluctuations in service costs from community to community. However, a thorough review may serve to reveal the potential to collect fees not previously collected, or to ensure that all recent changes in the General Laws have been incorporated into the municipal fee schedule.

Local ordinances and bylaws should be collected as the first step toward the preparation of a comprehensive listing of all locally collected and retained fees and charges; this information will serve as the basis for a comprehensive fee/permit ordinance or bylaw.

Additional information should be gathered by a systematic examination of all department activities for which a fee has been or could be charged. Department heads could provide the data necessary to justify increased costs or to determine services which should be curtailed or discontinued. Based on the information collected, local officials will have the following foundation to design a new revenue plan:

- a comprehensive listing of all current and potential revenue sources;
- estimates of costs to provide certain services;
- identification of services where fee increases can be expected to generate new revenues;
- identification of new services that could be provided by existing personnel, thus increasing revenues; and,
- information on current costs to justify proposed increases.

Department heads are probably in the best position to estimate service demand based on past use, requests for service, etc. Estimates of number of residents served, identification of high cost/low use services, and the potential effects of charging for a formerly "free" (provided by property tax payments) service. This information will be integral to the decision-making process establishing a revenue plan. Although cost consideration must be taken into account, the municipality's past practices and local support for certain services will also play a major role in determining both the feasibility and acceptance of a new fee structure.

Summary

An alternative revenue plan will reflect the political, social, economic, and administrative considerations of the community. Although each community has different financial and policy aims, the guidelines presented in this chapter can serve as a point of departure for a thorough examination of alternative revenue potential.

The creation and implementation of the plan is the first step toward realizing the gains of a sound alternative revenue base. Measuring demand throughout the year and adjusting fee schedules or administrative procedures for more efficient operations will be ongoing. Subsequent chapters of this manual will address the needs to identify and measure costs accurately, and establish effective procedures for overseeing the plan's operations. However, what new revenue opportunities to pursue is a decision best made in concert with those affected by it (residents and taxpayers), and those implementing it (municipal personnel). Establishing the foundation of support and understanding for local revenues will aid in realizing the best results from the plan's operation.

II. Cost Finding

Chapter II is an introductory discussion of the concepts associated with the cost finding process. The application of cost finding concepts to municipal activities and services is presented in greater detail in Chapter III.

How much does it cost to run government? Where is there fat in the budget? How can I justify charging for services that were always free? How much do I charge? With the passage of Proposition 2½ and need to augment the local tax base and operate government on a more efficient basis, Massachusetts local officials are becoming increasingly concerned with questions such as these. The answers are somewhat complicated, and a wrong answer can have adverse financial and political ramifications. The provision of police and fire services, trash collection, ambulance service, as well as other services have a variety of labor, material, and overhead costs associated with them. These costs may be directly or indirectly related to the activity. Our purpose is to guide you through a simplified process which will allow you to organize, collect, and translate a diverse set of financial data to determine the total cost of a government activity. *Governmental Accounting, Auditing and Financial Reporting* (GAAFR) defines cost as:

> "The amount of money or other consideration exchanged for property or services. Costs may be incurred even before money is paid; that is , as soon as a liability is incurred."(*Governmental Accounting, Auditing, and Financial Reporting,* MFOA , Chicago:1980, Appendix B, p.59.)

Determining the true cost of a govermental activity is essential to the needs of government managers and policymakers, as well as the general public. Sound cost information can:

- Provide information which will permit local officials to make better decisions (e.g., cost of service, productivity, comparisons with the private sector and other comparable jurisdictions).
- Present to the public a clear understanding of the diverse financial resources that support the provision of a service.
- Provide a basis to negotiate a payment in lieu of taxes with owners of tax exempt property.
- Formulate a basis to determine user fees and charges within the provisions of Proposition 2½, which limits the Commonwealth's towns and cities to charging no more than the actual cost of the service.

Historically, local governments have gathered some cost data for major municipal enterprises such as water, sewer, power and light, and hospitals because of the revenue producing nature of these services. In these examples, financial information is recorded for revenues earned and *expenses* or costs incurred, and these costs are converted from a general responsibility area (let us say hospital) to a direct service or category (out-patient clinic). Determining the cost for activities within the *General Fund* is done less frequently.

Sound cost finding practices require the collection of financial information on an *expense* rather than expenditure basis for General Fund activities. Expenditures relate to the purchase of goods and services while expenses relate to the *use* of goods and services. Our concern here is not with the purchase of the items. Rather, our focus is on the total cost incurred to carry out an activity or provide a service, and its relationship to the cost per unit produced, or delivered.

The conversion of expenditures to expense data is a two-step process. First, it is necessary to translate expenditure data into expense data; and secondly, convert this data from the general responsibility area

EXHIBIT A
Converting Expenditures To Expenses

I. Expenditure and expense occur simultaneously, or close in time.
Example: If a work crew needs additional supplies to complete a current job, supplies ordered would be an expenditure; as supplies are used on the project, they would represent an expense.

II. Expenditures of the current period are expenses in the future.
Example:The purchase of a three-year supply of salt and sand will be an expenditure for the year it is purchased, and an expense for the three years it is used.

III. Expenditures of a previous period are expenses in the current period.
Example:Police cars purchased as part of a bulk purchase contract are expenditures in the prior fiscal year, an expense when delivered for use in the current fiscal year.

The example below demonstrates the application of expenditure and expense information to a municipal service.

Peoplesville Snow Removal Program

Total FY 1981 Expenditures		$95,000
Less:	Purchase of New Vehicles	(20,000)
	Purchase of Auto Supplies at End of Year for Use in FY 1982	(2,000)
	Purchase of salt and sand for Use in FY 1982 and FY 1983	(10,000)
Plus:	Depreciation on Building and Vehicles	15,000
	Purchase of Fuel in FY 1980 Used in FY 1981	2,000
Total FY 1981 Expenses		$80,000

to the direct service or activity areas.

This two-step process of converting expenditures to expenses is complicated by several factors. First, it may be necessary to collect expenditure data from more than one fund. For example, the community development department may be financed in part by a federal grant, and in part through the general fund. Second, the function or activity may be supported, directly or indirectly, by other departments. In carrying out its duties, the community development department must rely on the support of various departments, such as finance, personnel, and legal. Third, there may be certain shared, or joint, costs in producing the service. Employees from the public works department may assist community development staff in carrying out certain programs, or one supervisor may be responsible for several program areas. Two departments may be sharing the same office equipment or space. Fourth, there are "non-people" costs that must be converted to determine the full cost of community development efforts. For example, light, office space, telephone, vehicles, and necessary equipment likewise contain costs that justifiably could be allocated to community development activities.

In the above example, we see that to determine the full cost of an activity carried out by a community development department requires the collection of data from many sources. Although Chapter III will elaborate on the process for converting expenditure data to expense data, the traditional method of converting expenditures to expenses is *Cost Accounting*. GAAFR defines cost accounting as:

> "That method of accounting which provides for assembling and recording of all the elements of cost incurred to accomplish a purpose, to carry on an activity or operation, or to complete a unit of work or a specific job." (*Governmental Accounting, Auditing and Financial Reporting*, MFOA, Chicago:1980, Appendix B, p.59.)

Cost Accounting, or managerial accounting, as it is sometimes called, is an ongoing process which collects, classifies, analyzes, records, and summarizes cost data for the user within a formal cost accounting system. It may be job related, as in the use of construction projects, or process oriented, relating to various services or activities.

By this time, you are probably thinking that any attempt to collect cost data for municipal activities is too difficult a task to undertake. A less formal approach to determining the cost of an activity is *Cost Finding*. Cost finding may be defined as:

> "... a less formal method of cost determination or estimation on an irregular basis. There may be no formal accounting entries during the year to record costs incurred in specific cost accounts. Instead, cost finding usually involves taking available fund financial accounting data and recasting and adjusting it to derive the cost data or estimate needed." (William W. Holder, Robert J. Freeman, and Harold H. Hensold, Jr., "Cost Accounting and Analysis in State and Local Governments," *Cost and Managerial Accountants Handbook*, Dow Jones-Irwin, New York:1979, p.97.)

In other words, cost finding is the process of utilizing available financial data, or "finding" costs from budget details, the budgetary accounting system, analysis of detailed transactions (such as payroll records, invoices, stores requisitions, and contracts), and interviews with staff. These data are collected, assembled on worksheets, and analyzed to determine costs for units of service or projects.

To differentiate the process used to collect cost finding information versus regular budgetary accounting, Exhibit B shows the flow of costs from the original source to financial statements for the normal budgetary appropriation accounting system. Exhibits C and D show the flow of these sources from a cost finding point of view.

We have chosen to focus on the cost finding approach because it affords the Commonwealth's communities, many of which have limited experience in costing out services, an effective way to determine service costs from existing data.

We realize that Massachusetts local officials are adjusting to the new fiscal demands presented by Proposition 2½. In addition, some communities are going through a period of learning and adjusting to the new Massachusetts Uniform Municipal Accounting System. Under these conditions, we want to offer you a methodology to develop good cost data with minimal effort, and yet meet the requirements of Proposition 2½. Although cost finding is typically done on an irregular basis for special purposes, we hope it will provide a basis for local officials to develop an ongoing system for monitoring costs.

Relating Costs To Activities

The value of cost finding is the ability to relate cost to service. The development of cost finding techniques for specific units of effort is the best means of relating financial resources to output or workload. This is known as determining the *cost per unit.* To know that trash collection cost $750,000 last year gives us a limited view of how much we, as taxpayers, are paying for this service. Statements such as "trash collection cost $90 per residence last year" brings added meaning to how the sanitation department is performing this function. (Chapter IV will describe how this same "cost per unit" information is used in pricing municipal services.) Cost per unit information takes on added meaning for policymakers, management and citizens when it is compared to:

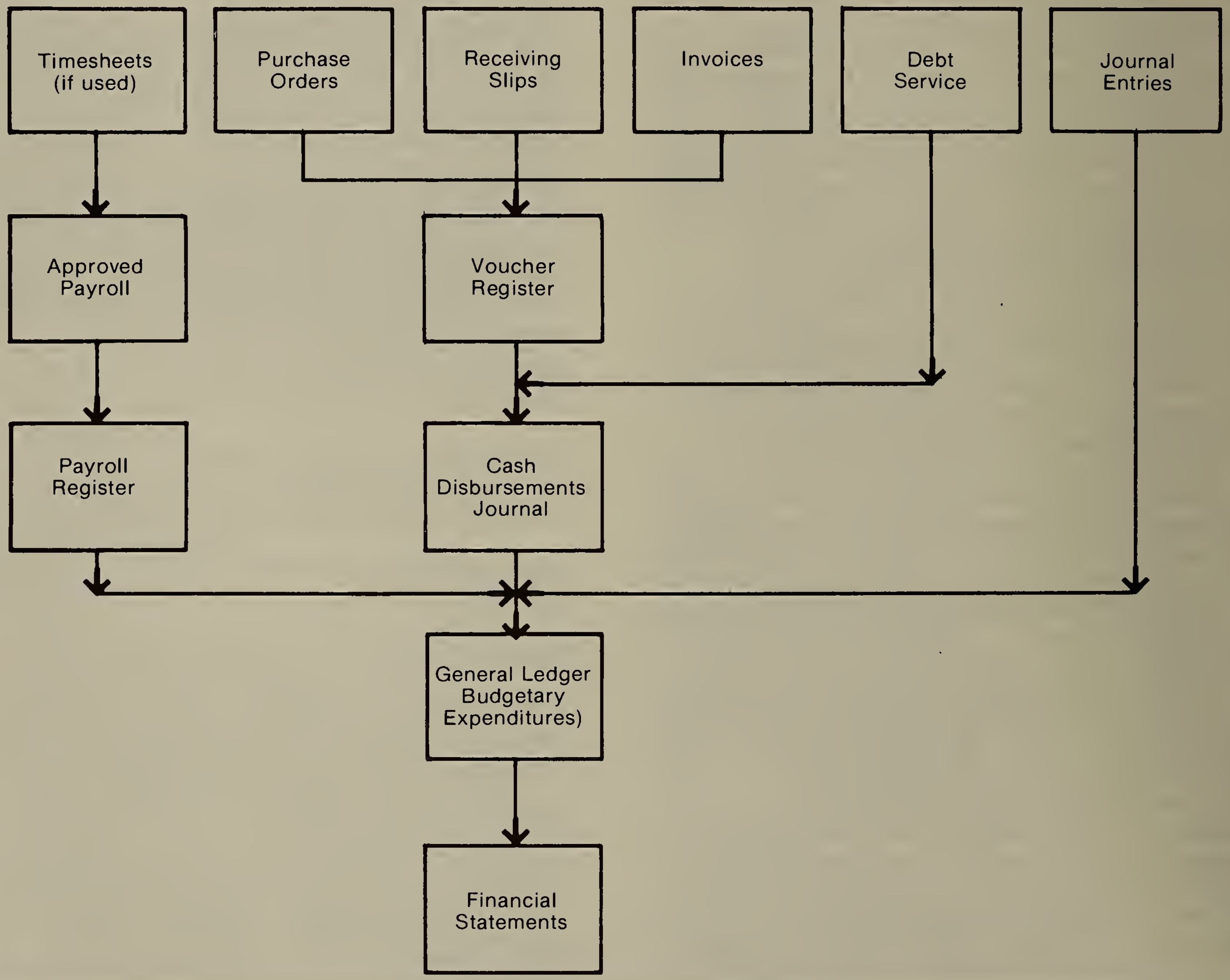
- prior years;
- neighboring jurisdictions; or,
- national standards.

Chapter V will discuss these management uses in greater detail.

A Cautionary Note

There are risks when making comparisons. Inflation may haven driven up the cost of the activity, or the neighboring jurisdiction may have arrived at their unit costs without all pertinent cost data, while you have recently undertaken a cost finding process to deter-

EXHIBIT B
Budgetary Appropriation Accounting Flow of Costs



mine all of the costs associated with a service. Furthermore, demographic changes or other shifts in the community makeup will have an impact on certain costs per unit. You should insure that the inputs for similar activities are the same before drawing conclusions based on comparisons.

Calculating Unit Cost

The formula for calculating unit costs may be stated as:

Investment ÷ Output = Unit Cost.

For example, the public works department spends $750,000 for trash collection to service some 18,300 residences annually. The cost per residence can be calculated as: $750,000 divided by 18,300 equals $41 per residence per year.

The first step in determining the cost per unit is to define various *cost centers* or responsibility areas for which cost may be calculated. A cost center is an activity or responsibility area for which costs can be reasonably accumulated and related to output. In smaller jurisdictions, a cost center may be classified at the departmental level: personnel, recreation, police, fire, public works, etc. For larger jurisdictions, a cost center may be defined by the activity or responsibility performed by the department. A public works department may have the following cost centers:

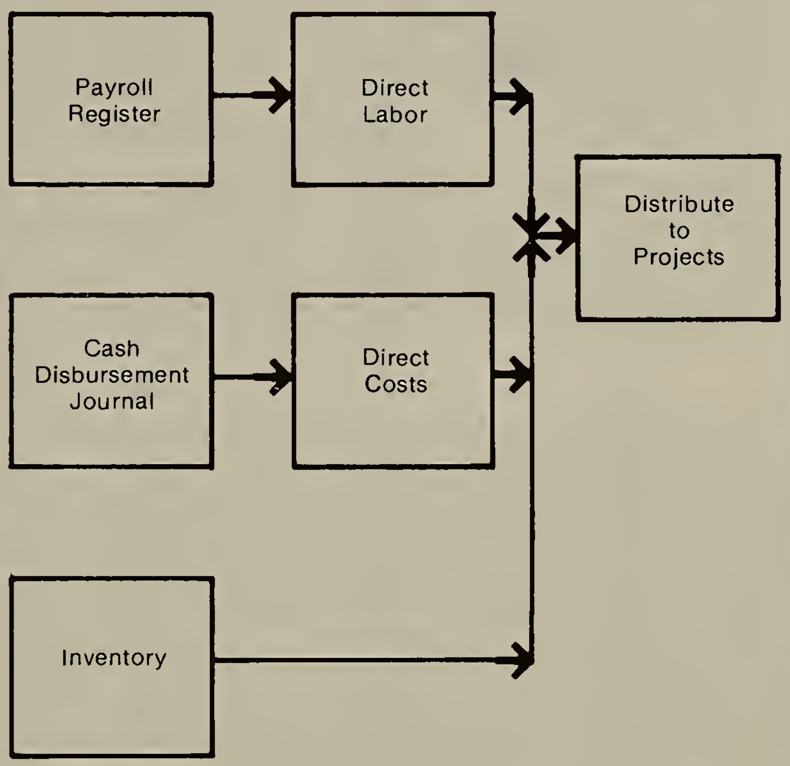
- Street Cleaning
- Street and Sidewalk Maintenance
- Snow Removal
- Trash Collection
- Streetlighting
- Landscaping
- Catch Basin Cleaning

The number and variety of cost centers is limited only by managerial imagination, and the ability to reasonably accumulate costs at that point and relate them to output indicators. Once you have developed the capability to establish and maintain valid cost centers, you will probably find that your city council, board of selectmen, and citizens will gain a clearer understanding of the services and activities your community provides.

After defining the cost center, appropriate and measurable units of cost must be identified. As in the case of our trash collection example, units of measurement must relate cost to output. The measures you decide on will affect the kind of cost information you need. This relationship may be expressed in terms of:

- cost per mile paved
- cost per hour of tennis lighting
- cost per gallon of water treated
- cost per cubic yard of excavation
- cost per check paid
- cost per tree planted
- cost per hour for special police detail
- cost per housing unit inspected
- cost per marriage license

EXHIBIT C
Flow of Direct Costs



A failure to properly define the meaningful output for each activity to be measured will produce misleading or useless information. For example, are we more interested in the "cost per lawn mowed" or the "cost per acre mowed"? It is necessary, therefore, to assure that the unit definition relates to the nature of the activity. To guide this identification process, activities are typically broken down into two categories: *job order* and *process.*

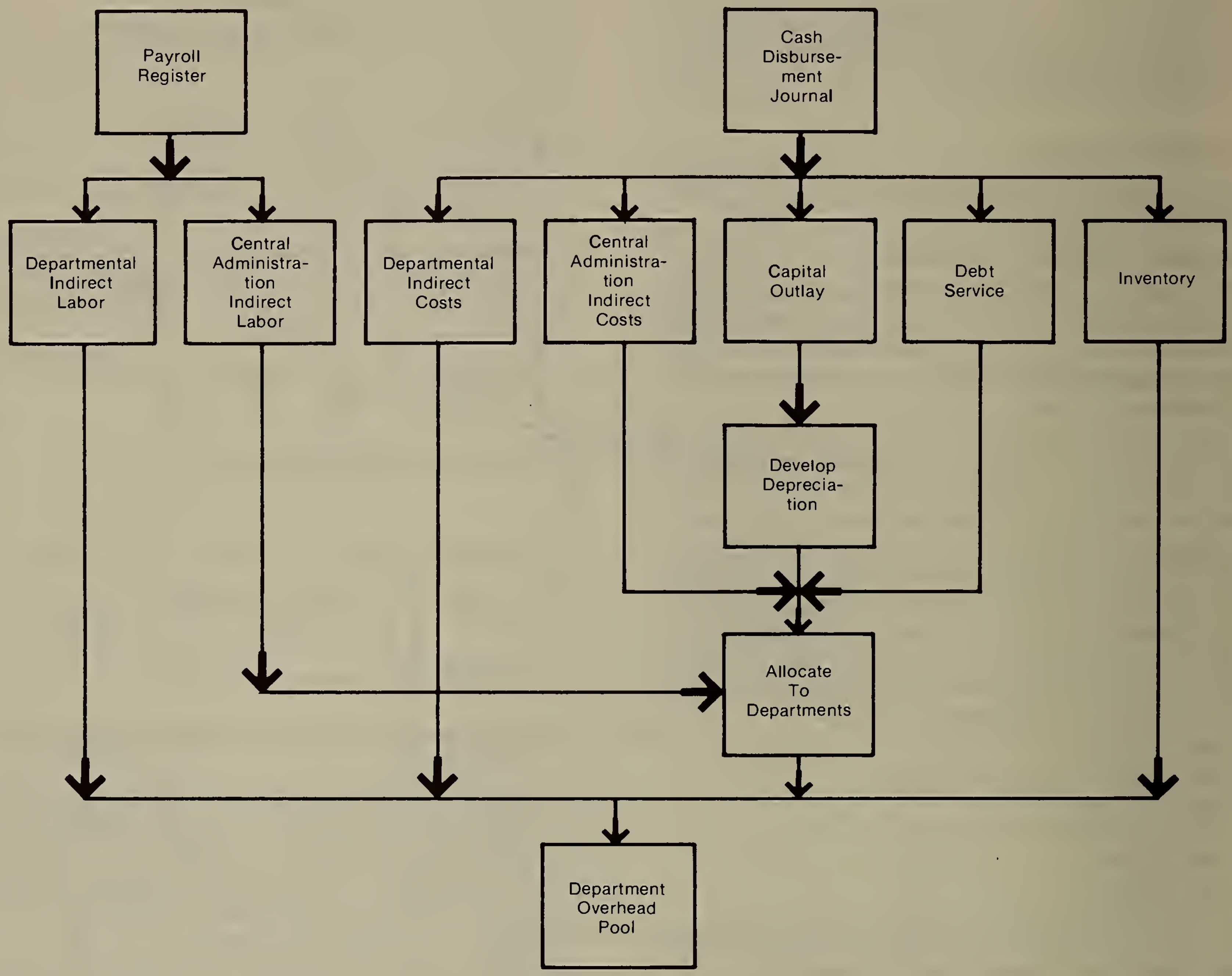
Job order costing is used when the activities performed are unique or dissimilar within a cost center. Job costs relate to a well defined, specific piece of work (a job). Construction and improvement projects, maintenance activities, repair of vehicles, and grant activities are typical job orders.

Process costs are uniform costs associated with a continuous operation. They refer to municipal services which are ongoing or routine. Typical examples of process costs include: trash collection, water and sewer services, police protection, data processing, and accounting.

The key distinction between job order and process costs, for our purposes, is that for job-type services the cost of delivering services varies substantially from job-to-job. In such cases, you will probably want to record the amount of the service provided and charge users varying fees accordingly.

For example, the cost of a curb replacement program is a function of the length of the curb being

EXHIBIT D
Flow of Indirect Costs


Payroll Register
Cash Disbursement Journal
Departmental Indirect Labor
Central Administration Indirect Labor
Departmental Indirect Costs
Central Administration Indirect Costs
Capital Outlay
Debt Service
Inventory
Develop Depreciation
Allocate To Departments
Department Overhead Pool

replaced. A determination of program cost on a "cost per replacement" basis would be misleading since it would not distinguish between a replacement job of fifty linear feet and ten linear feet. In this example, a much more accurate measurement would be "cost per linear foot", or cubic yards of concrete used. For example, the cost of processing each marriage license will always be the same. To determine the "cost per license" we simply divide the total processing cost by the number of licenses processed.

The issuance of building permits is an interesting example of a service with some of the attributes of both job and process activities. Clearly, it requires more time to review blueprints and conduct inspections for large buildings than for small ones. But, the permit is really the only tangible output of the building inspection; only the inputs vary. The solution in many jurisdictions is to charge permit and inspection fees based on the value of the building or building improvement. Value is a good proxy of the amount of work of the inspections. Thus, in a cost analysis of the building department, we may want to develop cost data "per thousand dollars of value".

One further note on relating costs to activities. Unit cost focuses on production volume and efficiency, not quality. To bring about higher quality service may require increased unit cost. For example, the public works department may use a more expensive grade of materials for street resurfacing. This increase in the "cost per mile paved" might be offset by future cost savings if the newly paved street has a longer useful life.

Cautionary Notes

Many of you will be undertaking cost finding for the first time. Because your emphasis may be to collect data in order to set fees and charges, we suggest that *your initial efforts be focused on collecting cost data for items with major revenue producing potential. The level of effort required to cost out small revenue producing items, such as the "cost per marriage license," in order to set a fee may be the same as finding the "cost per residential unit" for trash collection, which is a greater revenue generator.*

Also, certain municipal departments provide, in whole or in part, support to other municipal departments. These support activities may add considerable expense to the cost of government. While perhaps more difficult to define, it is important to establish unit cost measures for these departments. Management should know how much it costs to process a payroll check, process an invoice, or issue a purchase order.

In reviewing the performance of a department or program using cost per unit information, it is important to understand that costs may be controllable or uncontrollable. While department heads can control such direct costs as labor and materials, they should not be held accountable for those costs that are beyond their control. These uncontrollable costs are typically associated with support departments, such as personnel, accounting, etc. These costs may also include depreciation for equipment purchased by other departments or by the department head's predecessor.

Elements of Cost

If I do cost finding, what are the costs that I must consider? Exhibit E presents a breakdown of typical local government categories of major expenditure. Within these categories, the *objects of expenditures* presented appear in some format in your municipal budget, as well as in your accounting records and financial reports. To accurately classify these expenditures, a *chart of accounts* is required. The Commonwealth's Uniform Municipal Accounting System prescribes a chart of accounts for Massachusetts towns and cities. It provides a systematic approach to classifying expenditures with integrity and consistency. To fulfill this objective, the chart of accounts should classify information in at least the same format and level of detail as that used to prepare, review, and adopt the municipal budget.

How do you, the municipal manager, view these objects of expenditure in terms determining the cost of service? The total cost of providing a service or undertaking an activity is derived from two cost elements: *direct costs* and *indirect costs.*

Direct Costs

Direct costs are those which can be readily attributed to the provision of a specific good or delivery of a particular service. Direct costs include labor and services, as well as materials and supplies. For example, the public works department is undertaking a sidewalk repair program with its own employees. The salaries of the work crew, the concrete they use to repair the sidewalk, and the departmental equipment they use are direct costs associated with the street repair program. However, knowing the direct cost of repairing

EXHIBIT E
Objects of Expenditure

PERSONAL SERVICES
- Salaries and Wages, Permanent Positions
- Salaries and Wages, Temporary Positions
- Additional Gross, Overtime
- Additional Gross, Differentials (optional)
- Fringe Benefits, to Employees
- Fringe Benefits on Behalf of Employees
- Other Personal Services

PURCHASE OF SERVICES
- Energy
- Nonenergy Utilities
- Repairs and Maintenance
- Rentals and Leases
- Other Property-related Services
- Professional and Technical
- Tuition
- Pupil Transportation
- Communication
- Recreational
- Other Purchased Services

SUPPLIES
- Energy
- Office
- Building Repairs and Maintenance
- Custodial and Housekeeping
- Groundskeeping
- Vehicular
- Food and Food Service
- Medical and Surgical
- Educational
- Public Works
- Other Supplies

INTERGOVERNMENTAL
- Federal
- County Assessments
- State Assessments
- Other Assessments
- Other Intergovernmental

OTHER CHARGES AND EXPENSES
- Instate Travel
- Out-of-state Travel
- Dues and Subscriptions
- Insurance Premiums
- Judgements
- Veterans' Benefits
- Otherwise Unclassified

CAPITAL OUTLAY
- Land
- Buildings
- Plant
- Improvements
- Additional Equipment
- Replacement Equipment
- Capital Projects
- Transferred to Fixed Assets (Credit)

DEBT SERVICE
- Principal and interest payments on loans, notes, and bond

OTHER FINANCING USES

SOURCE: *Massachusetts Uniform Municipal Acounting System for Local Units of Government* (1981) the street does not give us the full cost of the sidewalk repair program. Have we considered the cost of the work crew's health insurance? The cost of the payroll department for preparing their paychecks? The repair and maintenance of the motorpool vehicles they use to bring the material and equipment to the job site? Or, the cost of the municipal liability insurance to protect the town if someone is hurt at the job site? Pension costs, municipal liability insurance, employee benefits, the cost of maintenance and repair of equipment, as well as the cost of central administrative services are expensive items. It is essential that management has a clear understanding of the impact these costs have on the cost of providing a service or carrying out an activity. These costs, sometimes referred to as *overhead*, are those cost elements which are in support of the provision of goods or service delivery.

Personnel Costs

Allocating personal services, as well as materials and supplies, must also be approached with caution. Personal services constitute more than 70% of the total budget of most departments. Because of its magnitude, it is essential to be as accurate as possible when calculating the "true" dollar amount for personal services in the cost finding process. Let us look at some of the factors that can cause distortion.

- A position was vacant for the first nine months of the fiscal year.
- A long-term sickness caused the hiring of a temporary worker paid through a contract and not charged to the personal services accounts.
- Pay increases often occur randomly throughout the fiscal year, yet have full year cost implications.
- A peak load demand requires an outside contractor to perform an activity normally undertaken by the municipal work force.
- Payroll records may not show an employee temporarily "on loan" to another activity.

Materials and Supply Costs

In the area of materials and supplies, you must:

- Eliminate purchases paid for this year that benefit future years (such as bulk purchase of supplies).
- Add the cost of those bulk purchases that were paid for in prior years that will be consumed this year.

It is obvious from the above examples that it is necessary to eliminate non-recurring expenditures that may distort normal operations and add expenditures that will become an ongoing part of the cost of the activity or service for which cost finding is being performed.

Cost Behavior

Now that you have a basic understanding of the components of cost, let us turn our attention to the impact of *cost behavior* on the cost finding process. What do we mean by cost behavior? Cost behavior describes how certain costs fluctuate in relation to some activity. There are two basic behavior patterns of cost: *fixed* and *variable*.

Fixed and Variable Costs

Fixed costs are those costs that remain constant regardless of changes in activity level. Once the cost is incurred, increases or decreases in activity level will not affect the total cost of the element. For example, your town leases a building for $40,000 per year to house an elderly drop-in center. As a result of Proposition 2½ a decision is made to reduce the operating hours of the facility from eight hours a day to four hours a day. Although the hours have been cut, the rental cost remains the same, or fixed.

Variable costs are those that change directly to changes in the level of activity. In the elderly drop-in center example, a reduction in operating hours will reduce staff costs, building maintenance costs, and utility costs. Conversely, increasing operating hours will raise these costs.

Semi-Fixed or "Step" Costs

Certain costs may be *semifixed*, or "step" costs. These are costs that are fixed at a certain level of activity, but begin to increase to higher levels, or steps, as the activity increases. For example, in our sidewalk repair illustration there is one supervisor for five repair crews. As long as the number of work crews does not exceed five, the cost of supervision remains fixed. If the sidewalk repair activity is expanded, added crews are required to perform the increased work. This increase in the level of activity may require an additional supervisor, thus fixing the cost of supervision at a higher cost level.

Relevant Costs

Most of you are thinking in terms of cutting services and programs, rather than expanding them, because of current fiscal pressures. In attempting to make cuts within this environment, one must look at the *relevant costs* associated with the activity or function. Relevant costs are those that change on the basis of a decision. For example, many Massachusetts municipalities are reducing the hours of operation in libraries, social service programs and youth centers. They may be eliminating evening hours, reducing the number of special programs offered (e.g., lecture series, field trips) and reducing staff. Cuts in these areas are considered relevant costs. Are there costs which remain unaffected? Yes, building insurance, maintenance, and the delivery of remaining services are examples of costs that will not be reduced. Knowing the relevant cost of an activity, and those that remain unchanged, is particularly important when your jurisdiction is examining program reduction, elimination, or contracting out services. Certain public expenses will not be reduced when service delivery practices are changed or the service is transferred to the private sector.

Depreciation

Accurate cost finding requires not only a clear understanding and a consistent allocation of both direct and indirect cost, it requires the proper allocation of the cost of acquiring major equipment or undertaking construction. Major fixed assets provide benefits that cover several years. For example, the purchase of a fire truck not only benefits the fire protection program in the year it is acquired, but is a key part of the program over the truck's useful life. A portion of the acqusition cost of the fire truck must therefore be allocated to each year, or accounting period, when the truck is used. This is a necessary part of the cost finding process so that we can determine the full cost of the fire protection service for any given time period.

Depreciation is the portion of the cost of a fixed asset which is charged as an expense during a particular time period. In accounting for depreciation, the cost of the fixed asset, less any salvage value is prorated over the estimated service life of the asset, and each period is charged with a portion of such cost. (*Governmental Accounting, Auditing and Financial Reporting*, MFOA, Chicago:1980, Appendix B, p.61.)

Local governments have traditionally not depreciated plant and equipment, yet these items do have a certain useful life and salvage value. The cost of using up (depreciating) a piece of equipment to the limits of its salvage value is a key ingredient to determining the full cost of an activity.

In order to undertake depreciation, it is necessary to define a fixed asset. There are general rules of thumb to defining a fixed asset. The item must:

- be tangible in nature;
- have a useful life longer than one year; and,
- have a significant value.

The significant value test is important because governmental units have many individual assets that are tangible and long-lived, but whose value is so small that the time and expense of maintaining detailed accounting and inventory records for them are not justified. Examples of fixed assets not having significant value for accounting purposes include pencil sharpeners, paper cutters, and small tools. What constitutes significant value will vary from one municipality to another, and from one class of fixed assets to another.

After determining what a fixed asset is, the next step is to determine the method for calculating depreciation for each class or type of equipment. Typically, the basis for calculation should reflect the asset used. Methods of calculating depreciation are discussed in Chapter III.

Summary

This chapter has covered much ground, perhaps too quickly. Let us take a few moments to review the discussion, and list some of the key words we need to know before turning to the next chapter.

As a local official, you are required , perhaps for the first time, to determine how much it costs to operate specific functions as opposed to simply providing a detailed list of governmental expenditures. Determining the cost of a governmental activity may be done through the somewhat informal process known as cost finding. Cost finding allows you to look at available financial data to determine the cost of an activity. This can be a one time activity that does not require the implementation of detailed procedures designed to collect, record, and analyze financial information that would be done in the more formal cost accounting process.

To do proper justice to this exercise, there is information on several types of costs that you must collect. These various cost types, or elements, will help to develop a clearer understanding of the factors that have an impact on the cost of providing a service.

For cost finding to be helpful, it must be related to the kinds of activities and services government provides. To do this, it is necessary to (1) identify the activities your government provides; and , (2) identify appropriate units of measure.

Go back through the chapter to make sure you understand the terms associated with cost that we have highlighted (see page number following term.) They are as follows:

- expenditure—p. 18
- expense—p. 18
- cost accounting—p. 19
- cost finding—p. 19
- cost per unit—p. 20
- job order costs—p. 21
- process costs—p. 21
- objects of expenditure—p. 23
- direct costs—p. 23
- indirect costs—p. 24
- overhead—p. 24
- cost behavior—p. 24
- fixed costs—p. 24
- variable costs—p. 24
- semifixed costs—p. 24
- relevant costs—p. 24
- depreciation—p. 25

III. Putting It All Together

At this point in the discussion, the reader may be forgiven the desire to exclaim, "Why me!" The concepts outlined in the preceding chapters are difficult, and the application of these concepts in a local government setting is far from straightforward. But take heart, in this chapter we put it all together.

Our purpose in this chapter is to provide you with the tools needed to prepare cost estimates for various government services. We describe a step-by-step approach for determining the full cost of services, illustrating the approach with examples from a hypothetical community.

We have followed two important guidelines in developing this part of the manual:

- The time and effort you spend on calculating each element of cost should be in proportion to the likely impact of that component on the total.
- Cost finding is a process of successful approximation. You should prepare initial "rough-cut" estimates, review the components, and then refine the estimates where additional analysis is likely to have a sizeable effect.

A key objective of the chapter is to propose simplifying assumptions, and to offer recommendations for the use of available data that will lead to approximately correct results, without the burden (or the cost!) of a more formalized system. At the same time, throughout the chapter, we highlight the recommended shortcuts and briefly describe more complicated alternatives. We want to explain the various options in sufficient detail for you to choose the techniques most appropriate to the needs of the community.

Chapter III is organized into sections that correspond to the five main steps in the proposed methodology:

1. Define the units to be measured.
2. Determine the sources of information to be used in the study.
3. Define the cost elements involved.
4. Calculate and allocate indirect costs.
5 Analyze the results, and refine the estimates, as necessary.

Getting Organized

Before getting started, let us develop some guidelines for establishing a process to do cost finding.

First, cost finding requires a team approach. It will be necessary to collect data from line departments, as well as central staff. To ensure that the information collected is accurate and useful, appropriate staff should be involved in defining the activities and appropriate units of measure.

The administrator, finance officer, town accountant, or other central administration official, should have the prime responsibility for directing the cost finding effort. In addition to providing overall direction, the finance officer should be responsible for collecting cost data from central administrative agencies such as personnel, legal, and payroll.

Department heads or programs managers should have responsibility for collecting data not maintained in the central accounts.

After the data is collected, the appropriate department head and the financial officer should analyze the results jointly. This will limit the potential for misinterpreting results. Furthermore, personal knowledge may substitute for information gaps.

Second, the data must be easy to collect. If the collection process is cumbersome, or the data is not well defined, results may be incorrect or misleading.

Third, the data collected should be accurate and complete. If those responsible for collecting data do so on an inconsistent basis, accuracy is lost.

Fourth, the data must always be consistent. The basis for determining unit cost should not change from month to month. If the data relates to the cost per residential unit for garbage collection, we have no basis for comparison if the next month we use cost per ton of garbage.

Fifth, the results must be timely. Data should be presented within established reporting periods. When making comparisons between reporting cycles, we must ensure that time frames are consistent.

Define the Units

Our objective is to come up with a reasonable measure of units of service provided, so that when we calculate costs, we can divide by number of units to produce cost per unit.

Let's take as an example, the services provided by a Public Works Department, such as refuse collection or public beach operations. (See Exhibit F.) Both of these services are likely candidates for establishing user charges.

How do you measure outputs for refuse collection? One measure typically used for refuse collection is the number of residential households to which collection services are provided. By calculating the total cost of refuse collection for a year, and dividing by the number of residential households, you will arrive at a cost per residential household per year. (We're ignoring for the moment the fact that the town also collects trash from commercial establishments.)

This service measure is a good one because the data is readily obtainable, and the resulting figures provide a workable starting point for user charge decisions. Alternatively, you might select number of tons or number of cubic yards of trash collected, although they do not serve very well as a basis for calculating user charges.

Contrasting cost per residential household and cost per ton illustrates how the unit of measure you select can affect your cost finding exercise. In our example, the Sanitation Division of the Public Works Department collects refuse from both residences and commercial establishments. If you want the actual cost per residence, you will have to classify the costs of the refuse collection program into two categories: residential and commercial, so that you can eliminate the commercial collection costs from the total. This classification would not be necessary if you were simply interested in the cost per ton, irrespective of whether the refuse is from residences or businesses. A middle position would be to calculate the cost per pick-up, ignoring the perhaps significant differences between commercial pick-ups and residential pick-ups. While such an approach may be appropriate in the smallest towns, in general, the costs of commercial refuse collection are different enough to justify separate analysis. And, localities will have an easier time charging businesses "full" cost for refuse collection.

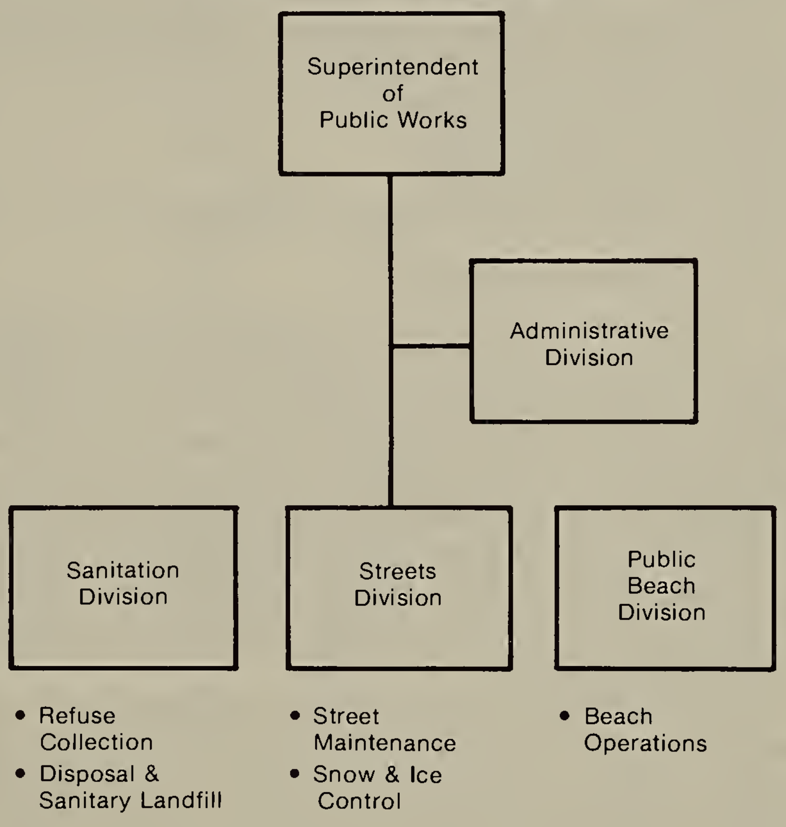
A common sense approach should be used in selecting service measures. You need to define concrete measures, the data must be readily obtainable, and the resulting costs per unit should provide a reasonable basis for your user charge decisions.

Exhibit G presents the services and service cost measures for our hypothetical Public Works Department.

Determine the Sources of Information

The principal purpose of this section is to identify the sources of financial and non-financial information that will be required to calculate service costs. We cannot cover all potential sources of information, nor can we say with assurance what sources are"best". What follows is a description of the major kinds of

EXHIBIT F
City of Peoplesville
Public Works Department



The Public Works Department of Peoplesville consists of three operating divisions, an administrative division, and the superintendent's office. The services provided by each operating division are indicated.

In our example, the superintendent has been asked by the administrator to prepare cost estimates for the department's refuse collection service.

EXHIBIT G
Public Works Department Services and Service Cost Measures

DIVISION	SERVICE	SERVICE COST MEASURES
SANITATION	Refuse Collection	• $ per Residential Household
		• $ per Ton
	Sanitary Landfill	• $ per ton
STREETS	Street Maintenance	• $ per Square Yard of Repair
	Snow & Ice Control	• $ per Lane-Mile Plowed
		• $ per Lane-Mile Sand or Salt
PUBLIC BEACH	Beach Operations	• $ per Person-Visit
		• 1 per Residential Household

The Superintendent of Public Works has decided to prepare cost estimates for the services provided by all operating divisions. For each service he has defined one or more relevant measures that may be used as a basis for establishing user charges or for monitoring the efficiency of department operations.

The financial officer has agreed that cost per residential household is a key measure for refuse collection. He is also concerned about the cost of collection for commercial establishments, however, since there is a wide variation.

information that will be available to you, and a discussion of the advantages and disadvantages of each source for particular kinds of costing problems.

Financial Information

There are three key sources of financial information for cost finding exercises:

- Actual accounting data;
- Line item budget; and,
- Special cost studies.

These three sources are discussed below.

1. *Actual Accounting Data*

Actual accounting data will usually be your most reliable source of financial information. Your town's Annual Financial Report is a good starting point.The financial report should include information of actual expenditures by department and/or function of government. For support functions, such as Purchasing or Personnel, the amounts presented may be used as a base for estimating the cost of these functions. These costs will, in turn, be allocated to divisions providing direct service.

More detailed expenditure estimates will be required for divisions or departments providing direct service than is typically included in the financial report. Each direct service provided by a department must be identified along with an estimate of the salary cost. This information may be available in backup accounting records used to prepare the financial report, such as the appropriation ledger. In the absence of such records, the department must develop the best estimate of salary costs.

For certain objects of expenditure, you may have to refer to transaction level accounting information. For example, purchases of bulk supplies, part of which will be consumed next year, may not be separately identified in the appropriation accounts. As a result, you will have to determine whether such purchases have been made and refer to specific transaction amounts as a starting point for estimating current period supplies costs. Equipment purchases that are not included in the capital budget present a similar problem.

You should also expect to refer to detailed payroll and personnel records to obtain information on average salaries by department and to determine the total amounts for overtime, other premium pay,and fringe benefit payments made through the payroll system. This information will be used, for example, to calculate the cost of annual and sick leave, and to estimate payroll costs incurred during the last few days of an accounting period, but for which no payment has yet been made (i.e., accrued salaries payable).

Your debt service and fixed asset records will also be needed for your cost study. Debt service payments entered into the accounting records may not distinguish between the principal and interest components. In such cases, you will have to refer to repayment schedules maintained for each issue to break out interest costs.

Fixed asset information is required to determine depreciation costs. At a minimum, you will need information of the age and historical cost of each major asset. (See Chapter II for a discussion on depreciation.) Typically, fixed asset information is a weak link in local government financial records. In such cases, we do not recommend that you attempt to reconstruct all fixed asset records. However, since the costs involved can be quite significant, we do suggest that you prepare such records for buildings, major utilities and significant equipment items. Again, this is a case where you develop information once that will be used for many cost studies.

The most significant problem with using actual accounting data for cost finding exercises is obvious—the costs you arrive at apply to prior rather than future periods. Alternatively, you may wish to prepare cost estimates based on forecasts of current period expenditures. This approach is described below.

2. *Line Item Budget*

Your community's line item budget (if, indeed you use a line item budget format) is probably the best estimate of the expenditures you will incur during the current fiscal year. In addition, the supporting schedules and worksheets used during budget preparation should contain a great deal of information directly relevant to key elements of costs. For example, you probably have for each department a personnel services worksheet detailing projected salaries, by employee, that reflects the impact of base pay and step salary increases, estimated turnover, new hires, etc. This information can be used as a starting point for preparing a cost study for the current year.

The problem with this approach is that the budget, as prepared and adopted, may not accurately reflect actual current year expenditures. Often the impact of transfers and budget amendments that occur during the year are quite significant and, if ignored, would significantly distort cost estimates based on the initial budget numbers. Only you are in a position to determine if this is the case in your locality. If you decide that these sorts of charges are not likely to have a material impact, you may use the budgeted amounts in place of actual expenditure amounts for your cost analysis.

An alternative approach to preparing a cost study for the current year is, first, to develop cost information based on last year's results. Then, walk through the analysis, factor by factor, reflecting estimated changes in each of the amounts between last year and this year. Budget information will be a key source of data for estimating year-to-year changes. The one drawback to this approach is that it involves more work than simply beginning with this year's budget information. However, on balance, your estimates will usually be more accurate if you proceed in this way.

EXHIBIT H

CITY OF PEOPLESVILLE

JOB TICKET

Control Account__________ No.________ Job or Operation__________ Page No._____

Unit Cost Standard__________ Per__________ For Fiscal Year_____

	FIELD LABOR		MATERIALS					EQUIPMENT EXPENSE					
Date	Hours	Amount	Ref. No.	Quan.	Description	Price	Amount	Hours	Amount	Engineering and Overhead	Total Cost	Work Units	Unit Costs

This form provides a space to record the cost of labor, the cost of materials, the cost of equipment used, overhead costs, and the number of work units completed. Space is allowed on this form to fill in the unit cost standard.

(Adapted from: Accounting for Smaller Government Units. MFOA: Chicago. 1976. p. 316.)

3. *Special Cost Studies*

The methods outlined above are appropriate for costing a wide variety of ongoing government services. However, you will undoubtedly encounter special or unique situations where it is not possible simply to develop historical cost data for a particular service. In such cases, you will want to consider performing a study to measure directly the cost of the activity in which you are interested.

For example, you may be interested in determining the cost of issuing a building permit for a particular $500,000 office building. To do this you will need to:

- Record the actual time building department staff spend on the project.
- Record direct supplies, materials, and other expenses (e.g. travel, if necessary).
- Determine the full hourly cost of time spent by city personnel by developing a factor that reflects fringe benefits, and the cost of actual hours worked as opposed to paid hours. [That is, the hourly cost is not the annual salary divided by 2080 or 1950 hours (8 or 7½ hour days). Instead it is the salary divided by hours actually worked in the year, which may be as little as 85% of paid hours.]
- Develop factors for the variable components of indirect cost such as secretarial support, and reproduction costs.
- Develop factors for the other components of indirect cost to reflect utilities, depreciation, and other city-wide overhead expenses.
- Finally, calculate the cost of the project by applying these factors according to reasonable allocation bases.

This approach could also be used on more extensive "job-type" activities undertaken by the government. For example, you may want to capture the cost of a specific street and sidewalk repair job estimated to take a month to complete.

For a study this extensive, we recommend that you establish a subsidiary "job" ledger in which to record direct labor, materials, supplies, and other expenses. Your foreman would be responsible for collecting this information on job tickets that you provide him. Exhibit H provides an example of a job ticket.

Non-Financial Information

The most important non-financial information you must collect is information on the number of units of service provided. However, non-financial information enters into cost finding in a number of other ways.

Non-financial information serves as a basis for allocating indirect costs. For example, to allocate the cost of central purchasing to the Public Works Department, we could base our indirect cost on the number of purchase orders processed by Purchasing for Public Works. In other cases, we will be interested in allocating the cost of specific expense objects, e.g., utilities in a shared facility might be allocated among using departments on the basis of the number of square feet occupied.

Other types of non-financial information that may be required include:

- Estimates of useful life for various fixed assets, including the current age of these assets.
- Demographic information on employees, for example, to calculate the cost of health insurance (which is based on number of dependents).
- Payroll/personnel information on the number of days of accrued vacation and sick leave, as well as historical data on the proportion of sick leave actually used.
- Information on other potential days off for employees, such as emergency leave, or bereavement, and historical data on the number of days used.

Collecting The Data

We are ready to begin working with the actual data. The following exhibits provide the basic source information that we will use in our cost analysis of the city of Peoplesville refuse collection program. After reading through these Exhibits, you may want to assemble similar information for your locality.

Exhibit I presents expenditure data for FY 1981, the year for which we have complete information. As you can see, the city government includes a number of departments that perform functions—the Mayor, Finance, Personnel, Purchasing, and a central Motor Pool—several operating departments, including Public Works. The city budgets and accounts separately for capital acquisitions and for a number of other city-wide items, such as fringe benefits, pension payments, debt service, and liability insurance.

Exhibit J presents more detailed expenditure information, by object for the four divisions of the Public Works Department. This information was gathered from the city's central accounting records.

Exhibits K and L present summary information on the city's fixed assets and capital projects funds. These charts were taken from the city's FY 1981 Financial Report. In 1979, the city issued general obligation bonds to finance the purchase of a new city hall on a larger site. However, the city's detailed fixed asset records are incomplete.

Exhibit M has been taken from the city's Bond Register for its general obligation bond issue. The exhibit includes a detailed breakout of principal and interest payments due over the life of the issue.

Finally, we have included in Exhibit N the list of allocation bases that the financial officer and the Superintendent of Public Works have agreed should be used for the study. The financial officer has checked with clerical staff, with Purchasing, and with the building maintenance staff to ensure that data on the proposed bases can be gathered without an undue burden on the staff.

EXHIBIT I
City of Peoplesville
FY 1981 Annual Expenditures
(From Annual Financial Report)

Mayor	$100,000
Finance	105,000
Purchasing	110,000
Division of Personnel	95,000
Human Services	120,000
Law Enforcement	275,000
Fire Protection	200,000
Public Works	556,700
Motor Pool	75,000
Parks & Recreation	150,000
Centrally Budgeted Items	
—Fringe Benefits (Workers' Compensation, Health/Dental Insurance, Unemployment Insurance, Tuition Reimbursement)	250,000
—Pensions to Former Employees	80,000
—Debt Service	145,600
—Insurance (Liability, etc.)	10,000
TOTAL OPERATING EXPENDITURES	$2,272,300
Capital Outlay	
—Law Enforcement	$15,000
—Fire Protection	42,000
—Public Works	68,000
—Motor Pool	20,000
TOTAL CAPITAL EXPENDITURES	$145,000
TOTAL EXPENDITURES	$2,417,300

EXHIBIT K
City of Peoplesville
Fixed Asset Records And Capital Projects Funds

GENERAL FIXED ASSETS:	
Land	$510,000
Buildings	1,600,000
Equipment	575,000
Construction	200,000
Total	$2,885,000
INVESTMENT IN FIXED ASSETS:	
CAPITAL PROJECT FUNDS:	
General Obligation Bonds	$1,400,000
Federal Grants	600,000
State Grants	200,000
General Fund Revenues	585,000
Gifts	100,000
Total	$2,885,000

EXHIBIT J
City of Peoplesville Public Works Department FY 1981 Annual Expenditures
(From Accounting Records)

	Superintendent & Administration Division	*Sanitation Division*	*Streets Division*	*Public Beaches Division*	*Total Expenditures*
OBJECTS OF EXPENDITURE					
Personal Services	77,000	200,000	175,000	30,000	482,000
Supplies	3,000	5,800	5,000	1,000	14,800
Fuel		20,000	10,000		30,000
Leased Equipment		1,500	8,000		9,500
Repairs & Maintenance		9,100	5,000		14,100
Heat, Light & Power	5,000				5,000
Telephone	1,300				1,300
TOTAL EXPENDITURES	$86,300	$236,400	$203,000	$31,000	$556,700

EXHIBIT L

CITY OF PEOPLESVILLE

FIXED ASSET RECORDS BY FUNCTION

	TOTAL	LAND	BUILDINGS	EQUIPMENT
GENERAL GOVERNMENT				
Mayor				
Finance	$ 40,000			$ 40,000
Personnel	11,000			11,000
Purchasing	25,000			25,000
General Government Buildings	980,000	$ 80,000	$ 850,000	50,000
Motor Pool	140,000	20,000	50,000	70,000
Total: General Government	1,196,000	110,000	900,000	196,000
PUBLIC SAFETY				
Law Enforcement	175,000	35,000	100,000	40,000
Fire Protection	400,000	50,000	200,000	150,000
Total: Public Safety	575,000	85,000	300,000	190,000
PUBLIC WORKS				
Sanitation	169,000	25,000	100,000	44,000
Streets	155,000	25,000	75,000	55,000
Public Beaches	135,000	100,000	25,000	10,000
Total: Public Works	459,000	150,000	200,000	109,000
HUMAN SERVICES	145,000	25,000	100,000	20,000
PARKS AND RECREATION	310,000	150,000	100,000	60,000
	2,685,000	510,000	1,600,000	575,000
CONSTRUCTION WORK IN PROGRESS	200,000			
TOTAL CITY	2,885,000			

EXHIBIT M

TITLE: Permanent Improvement Bonds of 1978

KINDS OF BONDS AND MATURITIES:

SERIALS: $70,000 on 2/1/79 to 2/1/98

AUTHORIZED: By Resolution

DENOMINATION: $5,000

DATE OF DELIVERY: 2/1/78

PURPOSE: New City Hall

AMOUNT OF ISSUE: $1,400,000

DATE OF ISSUE: February 1, 1978

INTEREST PAYMENT: August 1 and February 1

INTEREST RATE: 6.00%

NO PREMIUM

EFFECTIVE RATE OF INTEREST: 6.00%

DATE OF DELIVERY	*INTEREST DUE*		*AMOUNT OF INTEREST DUE*	*PRINCIPAL DUE*		*PRINCIPAL AND INTEREST DUE ON EACH DATE*
	Coupon No.	*Bond No.*		*Bond No.*	*Amount*	
August 1, 1978	1	1-280	$ 42,000			$ 42,000
February 1, 1979	2	1-280	42,000	1-14	$ 70,000	112,000
August 1, 1979	3	15-280	39,900			39,900
February 1, 1980	4	15-280	39,900	15-28	70,000	109,000
August 1, 1980	5	29-280	37,800			37,800
February 1, 1981	6	29-280	37,800	29-42	70,000	107,800
August 1, 1981	7	43-280	35,700			35,700
February 1, 1982	8	43-280	35,700	43-56	70,000	105,700
August 1, 1982	9	57-280	33,600	↓	↓	33,600
	↓	↓	↓			↓
TOTAL (February 1, 1998)					1,400,000	

Define Cost Elements

In any study of government costs, the key point of reference for the local official is the budget and related budgetary accounting records. Most government costs are, in fact, reflected in the budget. The problem is that they are not classified in a convenient account structure for calculating the cost of services, or the budget may not be in sufficient detail.

Typically, local governments prepare budgets and accounts by object of expenditure within department and fund. Analysis is required to allocate costs incurred by departments to the specific services provided. This analysis consists of three main steps:

- Convert expenditures by object to expenses (i.e., costs).
- Add indirect costs to direct costs.
- Allocate full department costs among services (i.e., programs).

In this section, we perform the analysis required to convert available information on expenditures to costs. We do this both for the direct and indirect components of cost for the Sanitation Division of the Department of Public Works. Our objective is to provide sufficient detail on each cost element to enable the reader to begin a cost study for a municipal service.

Converting Expenditures to Expenses

While some costs will require out-of-pocket expenditures—and, thus, will be included in the budget—some costs, such as depreciation, do not require the use of funds by the government. Additionally, some expenditures included in the budget are not current costs. The total expenditures used to purchase a capital asset are reflected over a number of years and its cost is reflected as depreciation. The payment of principal is not a cost; however, the interest component of a debt service payment is a current period cost.

The basic steps in the process were illustrated previously in Exhibit A (Chapter II—Peoplesville Snow Removal Program). The example is repeated below to demonstrate the application of expenditure and expense information to determine the cost of the program in one fiscal year.

Total FY 1981 Expenditures		$95,000
Less:	Purchase of New Vehicles	(20,000)
	Purchase of Auto Supplies at End of Year for Use in Fy 1982	(2,000)
Plus:	Depreciation on Buildings and Vehicles	15,000
	Purchase of Fuel in FY 1980 Used in FY 1981	1,000
Total FY 1981 Expenses		$89,000

This FY 1981 cost figure does **not** include indirect costs, which, in Peoplesville, consists of such significant items as fringe benefits and pensions, as well as central support services, such as Finance. The approach we will use for handling these items is described in the next section.

A Cautionary Note

It is also important to recognize that governments often budget on the "obligation basis". That is, budget limits are enforced on the basis of purchase orders and contracts issued (i.e., encumbrances). At the end of the fiscal year there may be a significant dollar value of open purchase orders and contracts outstanding. These amounts are neither expenditures nor costs to the government. Therefore, the actual or estimated amounts of open encumbrances should be eliminated from cost calculations. Often, however, these amounts do not vary greatly from year to year, and, if this is the case, it may be more trouble to eliminate open encumbrances than is warranted by increased accuracy.

Adding Indirect to Direct Costs

After determining the direct costs of all relevant departments we must allocate indirect costs to the department(s) providing the service we are measuring. Exhibit O graphically depicts the flow of costs through the city government to the Sanitation Division of the Department of Public Works.

There is no rule specifying what is a direct and what is an indirect cost. For example, if all fringe benefits are budgeted and recorded in each operating division, fringes should be treated as direct costs of the division. If they are budgeted and recorded in a central expenditure account, they may be allocated as you would allocate indirect costs. In determining indirect costs one must first identify the municipality's support departments. Support departments are departments (or units) of local government that do not directly provide a service to the public but are necessary to support the operations of government. These include general government and administrative departments. General government includes the office of the mayor, city solicitor, and city clerk. Administrative departments may include personnel, purchasing, payroll, law, and central garage. Overhead costs may relate to costs incurred by operating and support departments not easily measurable and chargeable to them; and, therefore, costs may be recorded separately. These type charges include, for example, utility costs, insurance, fringe benefits, and data processing.

This seems clear-cut, right? Wrong. Depending upon the operating environment, a certain cost may be thought of as direct or indirect. For example, if your department is housed in its own building, the rent may be considered a direct cost. If the building is shared with other departments, the rent may be considered an indirect cost to be allocated on some basis among the various departments occupying space. For a sidewalk repair activity the cost of the motorpool vehicle may be an indirect cost to the public works sidewalk repair program. However, if the vehicle was purchased by the public works department to be used exclusively for the

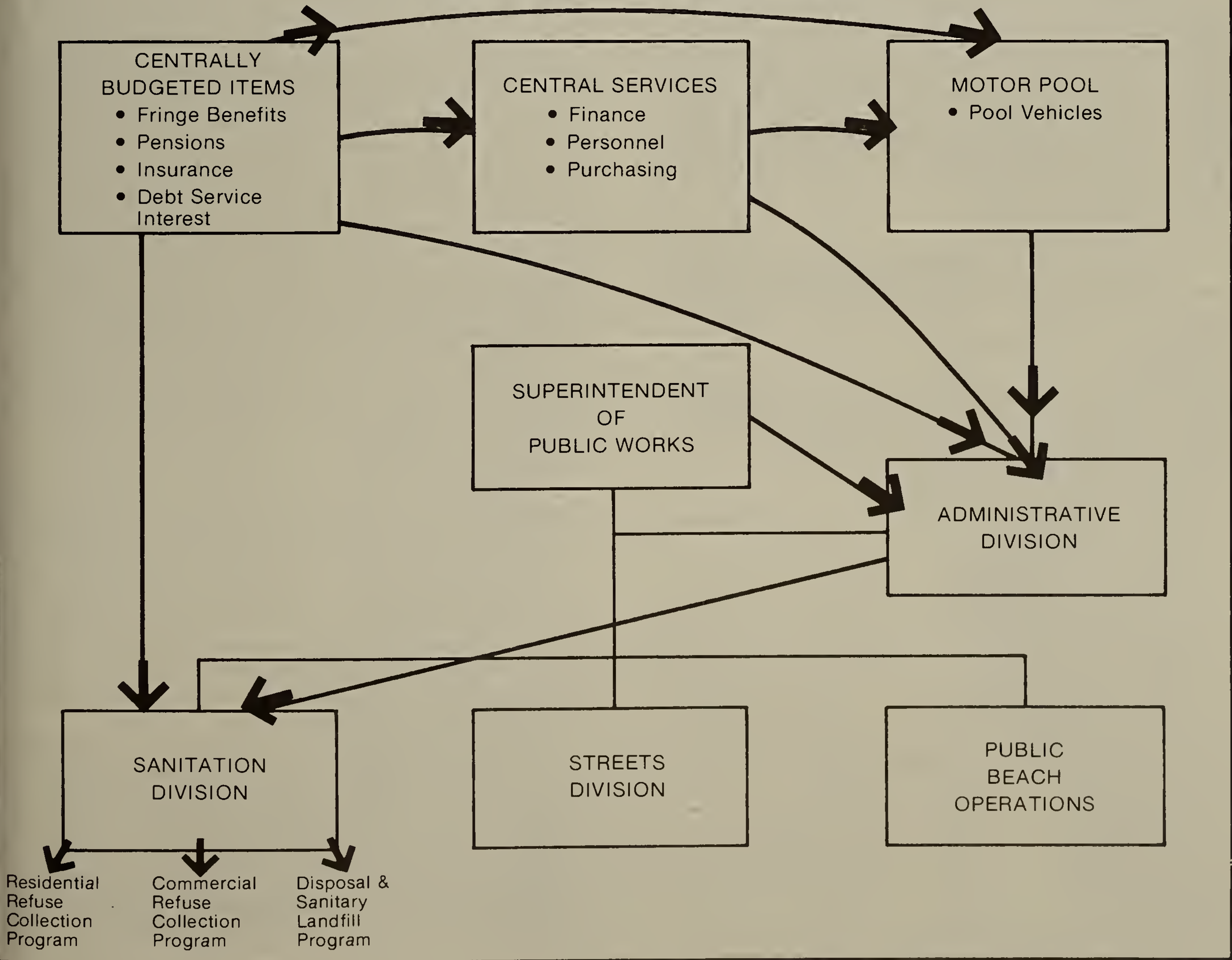
EXHIBIT N
Establishing Allocation Bases

As noted in Chapter II, it is necessary to develop a sound basis for relating costs to output. This exhibit provides practical examples for establishing allocation bases.

	Base
CENTRAL SERVICES:	
Finance	Transactions Processed
Personnel	Number of Employees
Purchasing	Purchase Orders (P.O.'s) Processed
MOTOR POOL:	Vehicles Assigned

	Base
CENTRALLY BUDGETED ITEMS:	
Fringe Benefits	Direct Salaries
Pensions to Former Employees	Direct Salaries
Liability Insurance	Square Feet Occupied
Debt (City Hall)	Square Feet Occupied (in City Hall)
PUBLIC WORKS OVERHEAD:	Division Costs

EXHIBIT O
Flow of Costs Through the Peoplesville Government



sidewalk repair program, it would be considered a direct cost. Fringe benefits may be considered either a direct or an indirect cost, depending on how they are budgeted.

You should also note in Exhibit O, the relationships among the various indirect costs of the government. The Motor Pool, which provides support to Public Works, itself receives support from other central support functions; and, these central services also provide direct support to Public Works.

Clearly the analysis of cost elements, and their designation as direct or indirect may be more of an art than a science. To simplify the process, a number of jurisdictions have created **internal service funds** to account for the financing of goods or services provided by one department or agency to other departments or agencies of a government, or to other governments, on a cost-reimbursement basis. (*Govermental Accounting, Auditing and Financial Reporting*, MFOA, Chicago:1980, Appendix B, p.66.)

A Cautionary Note

As noted in the preceding discussion, there is a degree of flexibility in the allocation of expenditures to certain services. We realize that local politics may suggest a "when in doubt, leave it out" approach to portraying the cost of a particular activity. We trust that as good managers and policymakers, you will develop a process that will report the data collected on a consistent basis at all times, and that the information will be meaningful to the users.

Personal Services

Personal services is generally the largest component of cost for governmental programs. These costs include:

- expenditures for salaries;
- overtime;
- other premium pay (e.g., holiday pay, shift differential, environmental or hazardous duty pay, pay for temporary help during periods of peak loads);
- various fringe benefits, such as:
  - —medical and dental insurance
  - —FICA, if applicable
  - —pension contributions
  - —workers' compensation
  - —unemployment insurance
  - —group life insurance
  - —disability insurance
  - —uniform allowance
  - —tuition reimbursement
  - —use of city vehicle
- leave, which includes the costs of:
  - —annual leave
  - —sick leave
  - —military leave
  - —bereavement
  - —jury duty
  - —holidays

In general, local governments will find it most convenient to treat only the base salary **plus** premium pay components of personal services costs as direct costs. Fringe benefits may be estimated as a percent of direct salaries and allocated on this basis. Where a community budgets and accounts for fringe benefits in each department (e.g., for uniform allowances) these costs can be treated as direct costs of the department or appropriate division.

A Cautionary Note

While for some fringe benefits, especially health insurance, it may be feasible to calculate direct costs based on the provider's rate structure (e.g., $1,200/year for a family with dependents) and demographic information on the employee population, we do not recommend this practice. It probably makes more sense to calculate the average cost of health insurance per employee, and use this amount in your cost calculation.

Two personal services cost elements require special attention: leave and pension costs. Both annual and sick leave are typically earned on the basis of hours (days, months) worked. Thus, leave cost is incurred before the leave is taken, even though there is no expenditure associated with this cost. Over a period of a year, if all vacation earned is taken, the government's cost is simply the employee's annual salary. However, if employees are allowed to carry over vacation from year to year, and if no vacation is taken during one year, the cost to the government for this year is the employee's annual salary **plus** the salary payable for the days of vacation earned. This can be a sizeable amount. For precise estimates of personal services costs, you may want to calculate the cost of annual leave earned and not taken during the year.

Exhibit Q outlines this calculation for Peoplesville. The cost to the government of the carryover of annual leave for FY 1981 is about $8,800. [This amount is included in the $204,800 listed as *item (1)*on Worksheet #1—Exhibit P].

Sick leave is a cost to the government only if it is taken. Depending on your community's policy regarding payment for unused sick leave, it can sometimes involve significant out-of-pocket expenditures. However, in most cases sick leave affects unit costs only by reducing service output. This figure can be quite significant in studies of labor productivity or of the actual cost of proposed salary increases. However, we will not consider it separately in the cost calculations included in this manual.

Historically, pension costs have been a problem for all governmental units. Pensions benefits are earned on the basis of days in service; however, governments have not been required to fund (i.e., make an expenditure for) pensions on the basis of benefits earned. Therefore, most governmental units have a significant unfunded pension liability. Precise estimates of the cost of services provided during a year

EXHIBIT P

WORKSHEET #1: CONVERSION OF EXPENDITURES TO EXPENSES

COST CENTER	FY 1981 TOTAL EXPENDITURES	DEDUCTIONS		ADDITIONS		TOTAL COSTS
		CAPITAL	*OTHER PERIOD EXPENSES IN CURRENT PERIOD*	*DEPRECIATION*	*CURRENT PERIOD EXPENSES IN OTHER PERIODS*	
Centrally Budgeted Items						
Fringe Benefits	$250,000				$204,800[1]	$454,800
Pensions	80,000					80,000
Liability Insurance	10,000		$ 5,000[4]			5,000
Debt Service	145,600	$70,000	31,500[5]		29,750[5]	73,850
Motor Pool	95,000	20,000	2,000[3]	$15,000	1,000[2]	89,000
Finance	105,000			1,000		106,000
Personnel	95,000			500		95,500
Purchasing	110,000			1,000		111,000
Public Works						
Supt./Admin.	86,300					86,300
Sanitation	254,400	18,000		11,000		247,400
Streets	253,000	50,000	8,000[3]	15,000		210,000
Public Beaches	31,000			1,000		32,000

[1] page 39 [2] page 39 [3] page 39 [4] page 39 [5] page 41

EXHIBIT Q

City of Peoplesville—Accrued Annual Leave Cost Analysis

OBJECTIVE: To determine the cost to the city of unused vacation earned during FY 1981 that will be carried over from this year to next year. We do this by estimating the total value of unused vacation at the end of FY 1980 (including fringe benefits associated with vacation days) and again, at the end of FY 1981. **The difference between these two amounts is an FY 1981 cost.**

STEP 1
Determine the number of days of accrued annual leave at the end of FY 1980. From payroll records, this amount is determined to be 240 days.

Days of accrued annual leave: 240

STEP 2
Determine the dollar value of direct salaries for the 240 days at the end of FY 1980.

Average daily rate: $ amount of last full payroll of year ÷ (# of days in pay period × # of employees)

(a) The direct salary amount may be available from payroll records.

$56,200 ÷ (11 days × 100 employees) = $51.09/day

(b) If not available, calculate the the amount by multiplying 240 days × the average daily rate.

240 days × $51.09 = $12,262 (direct salary cost)

(c) Alternatively, you could calculate the usued leave from each employee or employee group. Multiply the number of days of unused leave by his/her daily rate. If higher paid employees have more unused leave, the total could be significantly greater than using the average daily rate.[1] However, this approach is very time consuming.

STEP 3
Add the dollar value of fringe benefits to direct salaries.

(a) From the FY 1980 accounting records, divide the total fringe benefit expenditures by total direct salaries.

$225,000 (fringe benefits) ÷ $1,320,000 (direct salaries) = 17%

(b) However, this 17% does not reflect significant pension liability incurred by the city but not funded. Therefore, we need to develop estimates based on a percent of direct salaries for each benefit type, including pensions.[2]

Fringe Benefit	*% Average Salary*
Health & Dental	10%
Pensions	14%
Workers' Compensation	1%
Unemployment Compensation	4%
Other	2%
	31%

(c) Multiply the cost of unused leave by the fringe benefit rate.

$12,262 (direct salaries) × 1.31 = $16,063[3]

STEP 4
Repeat steps 1 - 3 based on information as of the end of FY 1981.

(a) days of unused leave = 350

(b) daily rate calculation

$62,000 (last payroll) ÷ (12 days × 97 employees) = $53.44/day

(c) direct salaries value

350 days × $53.44/day = $18,704

(d) fringe benefit rate for FY 1981 is 33% (note: 2% above FY 1980)

(e) value of unused leave (direct salaries × fringe benefit rate)

$18,704 × 1.33 = $24,876

STEP 5
Calculate FY 1981 cost by subtracting value of FY 1980 leave from value of FY 1981 leave.

$24,876 - $16,063 = $8,813 (n $8,800)

---

[1] Be sure the payroll amount you use is **gross,** not net pay and that overtime amounts are excluded. If your city has multiple pay groups, e.g., a bi-weekly group and a monthly group, you may have to determine a weighted average of the various pay groups. The daily rate calculation would be performed as follows:

[# Group 1 Employees × (Group 1 Payroll Amount ÷ # days in Group 1 Payroll)
+ # Group 2 Employees × (Group 2 Payroll Amount ÷ # days in Group 2 Payroll)]
Total: (# Group 1 + # Group 2 Employees)

[2] If your city has different benefit packages for different groups of employees, you may want to treat each group separately to determine the leave contribution by group.

[3] Amount excludes value of vacation or sick leave earned while on vacation.

must include the additional pension liability incurred by the government during the year. Precise estimates of these amounts can only be made by a consulting actuary, and thus, is considered beyond the scope of this exercise. However, studies conducted by the Retirement Law Commission suggest that this amount is often equal to about 14% of the payroll, and somewhat higher for police and fire personnel. (*Massachusetts Financial Committee Handbook*, Stuart DeBard, 1980 Edition, p.135.) In addition, this figure does not include the pension benefits paid to former personnel during the year, on the "pay as you go" basis, which are also costs to the government, as shown in Exhibit P.

The total base salary expenditures covered by pension benefits for Peoplesville in 1981 was $1,400,000. Taking 14% of this figure yields an unfunded pension liability cost of $196,000. This amount is reflected on Worksheet #1 with the $8,800 leave cost, under *Note (1)*. Thus, total expenditures on fringe benefits for FY 1981 must be increased by $204,800 to produce total cost.

Finally, we should note that often government payroll cycles are weekly or bi-weekly. This means that precise cost estimates for any period may require estimating the amounts payable to employees for some number of days between the last payday and the end of the period in question. If the measurement period is a year, ignoring this element introduces inaccuracies that are proportionately small, but that can be significiant in absolute dollar amounts. Further, if you are measuring units of service and costs for a monthly period, using salary paid rather than salary earned can have a drastic effect. Consider, for example, the fact that when the pay cycle is bi-weekly, some months have two paydays and some have three. However, since Peoplesville pays on a current basis, bi-monthly, no adjustment is required in our example.

Materials and Supplies

In undertaking our cost finding exercise, the key issue regarding materials and supplies is distinguishing between the expenditure required to acquire materials and supplies, and the cost incurred when they are used. Typically, smaller governmental units will count materials and supplies as costs when they are acquired, rather than when they are consumed. In most cases, the distortion this practice introduces is negligible, because materials and supplies represent only a small fraction of total costs.

However, when inventories of materials and supplies are significant, or when materials and supplies represent a large component of the cost of a service, you may want to estimate materials and supplies costs based on consumption.

For instance, in our example, the Public Works Department purchased six months worth of fuel at a cost of $14,000 ($4,000, Sanitation; and $10,000, Streets) during the last month of FY 1980 because of favorable market prices. Likewise, the Motor Pool purchased auto supplies of $1,000 in FY 1980 that were used in FY 1981. These amounts are indicated on Exhibit P as additions to FY 1981 costs (*Note 2*).

In addition, the Department purchased two years worth of salt in FY 1981 for snow and ice removal, again because prices were low. Approximately $8,000 worth of salt remained at the end of FY 1981. Likewise, the Motor Pool purchased $2,000 worth of supplies in FY 1981 for use in FY 1982. These amounts are indicated by *Note (3)* on Exhibit P.

Other Operating Costs

Other operating costs such as the cost of utilities, insurance, building and equipment leases, consultant and other professional services, or travel and transportation are presented in a single, broad category because, from our perspective in this cost analysis, they exhibit similar characteristics. In practice, these costs will usually be divided into more specific objects of expenditure in local government budgets.

The one unique characteristic often found in this category is that, sometimes governments make prepayments for these items. For example, the City of Peoplesville prepaid its liability insurance for two years in early FY 1981. In this case, the **cost** of the insurance must be distributed across the two years during which the government was covered by the insurance. This adjustment is indicated on Exhibit P by *Note 4*.

Depreciation

The calculation of depreciation itself is not difficult, but determining the charges that should be made to specific departments is sometimes more complicated.

A basic method for calculating depreciation is the *straight line method*. To determine the annual cost of depreciation using this approach, we simply divide the cost of the asset less any salvage value of the item by the estimated number of years the asset will be in use.

You should first refer to your fixed asset records,if they are available. The City of Peoplesville fixed assets by function have been presented in Exhibit L. The city completed and occupied a new $1.4 million city hall at the beginning of FY 1981. The new building houses all city departments except Public Works. The estimated useful life of the building is 50 years, and no salvage value is anticipated. Therefore, the straight line depreciation charge is:

[$1,400,000 (cost) - $0 (salvage)] ÷ 50 years (useful life) = 28,000/year.

We will allocate this charge based on the proportion of the available office space each department occupies, as follows:

Finance	$500
Personnel	$500
Purchasing	$700
Motor Pool	$1,000

Of the $28,000 yearly depreciation cost, $2,700 is represented by the four departments above; the remaining $25,300 is allocated among other offices not in our cost study (e.g., mayor, clerk, human services, parks and recreation).

The Public Works Department occupies the old city hall annex and garage, constructed in 1926. The city carries this building on its books at $200,000. Although the city has never recorded depreciation on the building, it would have been fully depreciated under the city's 50 year useful life guideline for buildings. Therefore, in the example, no depreciation charge is recorded. Note, however, that for Federal programs, FMC 74-4 allows you to record a use charge (in this case, 2% of historical cost) even though the asset is fully depreciated. Whether you do this or not for your cost studies is a matter of local policy.

Cautionary Note:

The Commonwealth of Masachusetts Uniform Municipal Accounting System **requires** *recording of fixed assets for enterprise funds (see Chapter 4 for discussion of enterprise funds). For non-enterprise activities, communities without adequate fixed asset records should examine either insurance records or assessor's records to determine value and life of fixed assets.*

If we were to establish an annual depreciation rate for a building with a 50 year useful life, it would be calculated as follows:

1 (year) ÷ 50 (useful life) = 2% (annual depreciation)

Using this approach we could calculate depreciation for a given fiscal year by multiplying the annual depreciation rate by the cost of the building. This is calculated as follows:

2% (annual rate) × $1,400,000 (cost) = $28,000 (depreciation)

Depreciation on capitalized equipment is calculated in the manner outlined above. Of interest is the fact that Public Works purchased a new truck in August, 1980. It is the city's policy to record a full year's depreciation on assets purchased before the middle of the fiscal year, and not to charge depreciation in the year the asset is retired. Alternatively, you may prorate the depreciation charge based on the number of days the asset is in use during the fiscal year. If we were to calculate depreciation on a mileage basis, we can use a similar process to the one discussed above. If we assume that the useful life of the new truck is 100,000 miles, the depreciation rate would be $0.20 per mile driven. This is calculated as follows:

EXHIBIT R
Accounting for Depreciable Assets

The city of Flint employed three different methods to account for the costs of equipment used to provide city services. Each method was tied to the way the city paid for the asset, and each resulted in a different cost calculation for providing the same service.

The first approach was to record the original cost of the equipment, not as an asset, but rather as an expense at the time of purchase. Such items were usually purchased under direct appropriation. Under the *direct appropriation* approach, city departments requested the purchase of equipment in their annual budgets in the full amount of that equipment's purchase price. If funds were available, the equipment was purchased. If they were not, a department made do with what it had. Once purchased, the equipment was used until it was no longer serviceable, at which time a request would be made for funds to replace it. Under this method, the annual budget of a department and the costs of the services it provided could fluctuate on the basis of whatever equipment was purchased in any given year. The disadvantage of this approach was that it often led to the use of outdated or obsolete equipment when the climate was not conducive to obtaining an appropriation for replacement. During the budget season, when cuts had to be made, it was easier to postpone the purchase of a piece of equipment than to displace an employee.

The second approach also did not record the cost of the equipment as an asset which was then depreciated. However, this means of financing spread the cost over the years prior to the purchase. This *trust fund* approach was used primarily by the fire division. Under this method, the fire division would annually request a budget appropriation for the Fire Equipment Trust Fund in order to accumulate funds over a period of years when the time came to make such a purchase. With this approach, the annual appropriation was supposed to approximate the annual utilization costs of fire equipment. The approach may have been a reasonable one; however, it suffered from the disadvantage that an appropriation to a trust fund is an easy budget item to cut. Hence the trust fund seldom accumulated sufficient funds to meet equipment replacement as they occurred.

The third approach, used primarily by the police division and public works department, was the *motor and equipment pool* approach. With this procedure, the motor and equipment pool purchased vehicles and equipment and then, in turn, rented them to city divisions and departments. The equipment purchased was recorded as an asset in the Motor and Equipment Pool Fund. Annually, the departments included the rental costs of the equipment in their budgets. During the course of the year, the divisions and departments paid the motor and equipment pool the costs of operating costs, administrative costs, and depreciation.

Under this last system, the motor and equipment pool was able to accumulate funds that permitted the replacement of equipment when it deteriorated or became obsolete. At the actual time of replacement, a vote of the city council was necessary to approve the purchase, but an appropriation was not required since money was already available in the fund. The annual budget of each department showed only the rental or annual cost of useage. This approach encouraged the timely replacement of vehicles and equipment, since the funds for purchasing the replacements could not be diverted to other purposes.

(Source: Rapp and Patiticci, *Managing Local Government for Improved Performance*, 1977)

[$20,000 (cost) - $0 (salvage)] ÷ 100,000 miles (useful life) = $0.20/mile (depreciation rate)

If the truck were driven 20,000 miles during the fiscal year, $4,000 of depreciation expense would be charged against the Public Works program (20,000 × $0.20 =$4,000).

You should be aware that when you trade in or sell capital assets, it is possible that you will again realize a loss because estimates of salvage value are just that—estimates. These gains or losses may increase or decrease costs for the affected fiscal year. We have not included an example of this type of transaction.

Exhibit R presents a comparison of approaches used by one city. All FY 1981 depreciation charges for Peoplesville are included in the appropriate column of Exhibit P.

Cautionary Note:

For certain types of fixed assets—such as furniture and furnishings, office machines, and similar equipment—we recommend calculating depreciation by the group method. Under this approach, the total cost of groups of similar fixed assets are recorded and the depreciation is calculated based on this total.

Because depreciation is based on certain assumptions about the useful life of the asset, it is suggested that a periodic review of actual life of the asset be made and the depreciation rate adjusted accordingly.

In the above examples, the depreciation cost of the truck could be viewed as a direct cost to the refuse collection program. However, if the asset is used for general public works operations, depreciation would be an indirect cost to each division making use of the equipment.

As noted earlier, Federal Management Circular (FMC) 74-4 offers an alternative to depreciation as a measure of the consumption of fixed assets, a so-called "usage charge." Under this approach, 2% of the cost of undepreciated buildings and 6 2/3% of equipment costs are used as the approximate annual expense.

Capital Outlay

Because the city of Peoplesville budgets and accounts separately for its capital expenditures, eliminating these amounts is quite straightforward. These eliminations are included under the appropriate column in Exhibit P.

Debt Service

Debt Service consists of the principal and interest payments on a government's loans, notes, and bonds. The *principal* of debt service payments is not a cost to the government (the cost is reflected as depreciation), and should not be treated as such. But, the interest component of debt service is a cost. This cost component can be quite significant, although it is often overlooked. Interest on tax anticipation notes should also be considered and allocated as a cost.

Exhibit M presented the breakdown between principal and interest expense of debt service payments made in FY 1981 for the city's $1.4 million bond issue. An interest only payment of $37,800 was made on August 1, 1980; and on February 1,1981, $70,000 in bonds were retired and an interest payment of $37,800 was made. Total expenditures for FY 1981 were $145,600.

As we have indicated, the $70,000 principal repayment must be eliminated, because it is not a cost. This amount has been included on Exhibit P as a deduction under the 'capital' column.

The remaining $75,600 ($145,600-$70,000) may be used as an interest cost estimate for FY 1981. However, there is a more precise method that may be used for calculating this amount of interest **accrued** during FY 1981 (i.e., the month by month amounts actually earned by investors. Note: this is not GAAP treatment of interest on general long term debt. But, we are interested in cost here, not GAAP reporting). As of July 1, 1980, the outstanding bonds equaled $1,260,000; on February 1, 1981 this amount was $1,190,000. Therefore, accrued interest for FY 1981 equals:

7 months (7/1/80 - 1/31/81) @ .005% per month on $1,260,000	$44,100
5 months (2/1/81 - 6/30/81) @ .005% per month on $1,900,000	$29,750
Total for FY 1981	$73,850

Another way of thinking about the problem is that the August 1, 1980 interest payment of $37,800 included $31,500 earned in FY 1981. These adjusting amounts have been entered onto Exhibit P. (*Note 5.*)

Summary

We have now completed Worksheet #1 (Exhibit P). Adding across yields total costs for all direct and indirect cost elements included in our cost study. In the next section, we consider the problem of allocating indirect costs to the Sanitation Division and, in turn, to the Division's refuse collection activity.

Calculate And Allocate Indirect Costs

Our objective in this section is to calculate the full cost of refuse collection based on the costs that we developed above. The easiest way to describe the steps in this process is to trace all of the elements of cost through the government to refuse collection: (You may want to refer to Exhibit O as we describe these components.)

Step 1: Allocate the costs of items that are budgeted and accounted for centrally to each department and division involved in the study. For example, fringe benefits must be allocated to Central Service Departments, the Motor Pool and each of the Divisions in Public

Works. This step will produce the full cost of Central Services and the Motor Pool.

Step 2: Next, we allocate the full cost of Central Services and the Motor Pool to the Public Works Department, in total. This will produce the city-wide overhead component of the Department of Public Works overhead costs.

Step 3: Then, we allocate the Department overhead costs—consisting of the cost of the Superintendent's Office, the Administrative Division, and city-wide overhead—to the operating divisions.

Step 4: Finally, allocate the full cost of the Sanitation Division obtained in Step 3 to the three services provided by the Division.

The following sections present these calculations.

Step 1: Allocate Centrally Budgeted Items

Exhibit S presents our calculations for the allocation of centrally budgeted items to the City's organizational units. The exhibit provides three columns for each of the items to be allocated: the allocation base, the proportion of the base, and the amount to be allocated. Totals are entered on the **top line** of the worksheet.

Note that we have combined fringe benefits and pensions to former employees. The reason for this is that both cost elements are allocated on the basis of proportion of direct salaries. Direct salary figures should be available in the accounting records. (The direct salary figures for Public Works are taken from Exhibit J.)

Additionally, we have allocated fringes and pensions to the Division level in Public Works, while no allocations are made to Public Works for debt service, and only a single allocation is calculated for liability insurance. Fringes and pensions are allocated to divisions because we have solid information on the allocation base, i.e., direct salaries. Other things being equal, we prefer to allocate to the lowest level for which allocation base information is available, because, by reducing the need to "reallocate" allocated amounts (e.g., allocate fringes to Public Works overhead and then allocate overhead to Divisions), we increase the accuracy of the data and simplify our calculations.

No allocation is made to Public Works for debt service interest, because debt service in Peoplesville applies only to the bond issue for the new city hall. The Public Works Department is not located in the new city hall. Finally, we make a single allocation to Public Works for liability insurance, because we are not able to easily measure the square feet of space occupied by each of the divisions.Square feet occupied is the allocation base.

Step 2: Allocate Central Services

From the information included in Exhibit P and Exhibit S, we are able to assemble a full cost summary for the motor pool and central service departments. This summary cost data is presented in Exhibit T.

We must now allocate these central service costs to the Public Works Department. Again, because we have no information on the allocation bases for division within the department, we allocate these to the department in total. The results of this procedure are presented in Exhibit U.

The approach we have used here is the so-called direct allocation method. Alternatively,you may wish to employ a step-down allocation procedure. The purpose of step-down allocation is to measure more accurately the interactions among service departments. (For more information, see *Fund Accounting*, Lynn and Freeman, 1974, pp.684-688.) However, it is much more complex. While the costs calculated by step-down allocation are somewhat more accurate than those calculated using direct allocation, typically the differences are small. Therefore, we recommend that you use the direct allocation technique in your initial cost finding exercises.

Step 3: Allocate Department Overhead Costs

From the information included in Exhibits P, S, and U, we are able to assemble a cost summary for the public works department. This summary information is presented in Exhibit V. Direct costs are presented in column 1, centrally budgeted items in column 2, and total central service costs (city-wide overhead) applicable to public works are shown as a separate item. The full cost of department operations for FY 1981, $838,131, is substantially higher than operating expenditures of $566,700.

We are now ready to allocate public works overhead to operating divisions. This overhead consists of the full costs of the superintendent's office and administration division ($116,769-from Exhibit V) and the Public Works share of city-wide overhead ($75,405-from Exhibit U). The total ($192,174) now needs to be allocated to each operating division. This allocation is based on each division's percentage share of total public works direct cost, as shown in Exhibit W.

Step 4: Allocating the Full Costs of the Sanitation Division to Residential Refuse Collection

In Exhibit W, the cost of sanitation, totalling $323,876 is combined with the sanitation division's share of department and city-wide overhead ($95,778). As a result we find that the total cost of the sanitation division is $419,654. Now it is necessary to divide this cost among the three services performed by the division. The superintendent estimates that 70% of the cost of the division is related to refuse collection; and since the trash collection crews spend only one day per week collecting commercial refuse, 80% of the refuse collection activity is related to residential refuse

EXHIBIT S

WORKSHEET #2 COST ALLOCATION: CENTRALLY BUDGETED ITEMS TO DEPARTMENTS

	Fringes and Pensions			Debt Service			Disability Insurance			
COST CENTER	BASE: Direct Salaries	PROPORTION OF BASE	ALLOCATED AMOUNTS	BASE: Sq. Ft. City Hall	PROPORTION OF BASE	ALLOCATED AMOUNTS	BASE: Sq. Ft. City Hall	PROPORTION OF BASE	ALLOCATED AMOUNTS	Total Allocated Amounts
Total	$1,400,000	100.0%	$534,800	30,000	100.0%	$73,850	38,000	100.0%	$5,000	$613,650
Motor Pool	55,000	3.9	20,857	3,600	12.0	8,862	3,600	9.5	475	30,194
Finance	90,000	6.4	34,227	1,400	4.7	3,471	1,400	3.7	185	37,883
Personnel	85,000	6.1	32,623	1,000	3.3	2,437	1,000	2.6	130	35,190
Purchasing	95,000	6.8	36,366	1,000	3.3	2,437	1,000	2.6	130	38,933
Public Works:										
Supt./ Admin.	77,000	5.5	29,414	---	-0-		8,000	21.1	1,055	30,469
Sanitation	200,000	14.3	76,476	---	-0-		---	-0-		76,476
Streets	175,000	12.5	66,850	---	-0-		---	-0-		66,850
Public Beaches	30,000	2.1	11,231	---	-0-		---	-0-		11,231
Other-all	593,000	42.4	226,755	23,000	76.7	56,643	23,000	60.5	3,025	286,423

EXHIBIT T
Central Services Cost Summary

Cost Center	*Total Direct Costs**	*Allocated Amounts***	*Total Costs*
Motor Pool	$89,000	$30,194	$119,194
Finance	106,000	37,883	143,883
Personnel	95,500	35,190	130,690
Purchasing	111,000	38,933	149,933

* *Far right column, Exhibit P*

** *Far right column, Exhibit S*

collection.Therefore, the cost of residential refuse collection is:

$419,654 (division cost) × .70 (refuse collection) = $293,758

$293,758 (refuse collection) × .80 (residential collection) = $235,006

Analyze the Results

The city of Peoplesville has 5,910 residential households. Dividing the cost for FY 1981 by the number of residential households yields an annual, per household cost of $39.76.

The weakest link in this analysis is the last step, where, after estimating the full cost of the Sanitation Division with a fair degree of precision, the superintendent is forced to come up with estimates of the breakdown of these costs among the services provided by the department.We expect that this kind of situation will occur frequently. Most government departments provide multiple services, and typically, little actual accounting data exists by service within each department. The problem here is that small errors in these estimates can have a significant impact on the unit costs you calculate. For example, if the percent of the division's costs that go for refuse collection is reduced to 69%, i.e., by just 1%, the result is a $3,310 reduction which translates as a per household reduction of $0.56. Therefore, we recommend that you invest a significant level of effort on arriving at such estimates when the need arises.

This chapter has walked you through the methodology necessary to determine the cost of carrying out an activity. Once the process is completed, you have one basis to determine user fees and charges.

EXHIBIT V
Public Works Department Cost Summary

Cost Center	*Total Costs (Exhibit P)*	*Total Allocated Amounts (Exhibit S)*	*Total Cost*
Superintendent/Administration	$86,300	$30,469	$116,179
Sanitation Division	247,400	76,476	323,876
Streets Division	210,000	68,850	278,850
Public Beaches	32,000	11,231	43,231
Plus, share of city-wide overhead (Exhibit U)			75,405
		TOTAL:	$838,131

EXHIBIT U

WORKSHEET #3 COST ALLOCATION: CITY-WIDE OVERHEAD TO PUBLIC WORKS

	Motor Pool			Finance			Personnel			Purchasing		
COST CENTER	BASE:# Vehicles Assigned	PROPORTION OF BASE	ALLOCATED AMOUNT	BASE:# Trans. Procd.	PROPORTION OF BASE	ALLOCATED AMOUNT	BASE:# Employ.	PROPORTION OF BASE	ALLOCATED AMOUNT	BASE:# P.O.s Procd.	PROPORTION OF BASE	ALLOCATED AMOUNT
Total	12	100.0%	$119,194	8,000	100.0%	$143,883	97	100.0%	$130,690	1,100	100.0%	$149,933
Public Works	1	8.3	9,893	1,300	16.3	23,453	14	14.4	18,819	170	15.5	23,240
All Other	11	91.7	109,301	6,700	83.7	120,430	83	85.6	111,871	930	84.5	126,693

Total Amounts Allocated to Public Works: $9,893 + $23,453 + $18,819 + $23,240 = $75,405

EXHIBIT W

WORKSHEET #4 COST ALLOCATION: Public Works Department Overhead to Operating Divisions

	Public Works Department Overhead								
COST CENTER	BASE: Division Cost	% of TOTAL COST	OVERHEAD ALLOCATION	BASE:	% of TOTAL COST	OVERHEAD ALLOCATION	BASE:	% of TOTAL COST	OVERHEAD ALLOCATION
Total	$645,957	100.0%	$192,174						
Sanitation Division	323,876	50.1	96,778						
Streets Division	278,850	43.2	82,587						
Public Beaches Division	43,231	6.7	12,809						

IV. Pricing

Why should you be concerned with having a firm foundation on which to base fees and charges? With the passage of Proposition 2½, many of you will be relying on user fees and charges as an alternative to the property tax. In California, for example, the first year following passage of Proposition 13 saw an explosion of user charges and fees. By June, 1979, cities and counties had raised $125 million in new or increased user fees—about 19% of what they had lost in property tax revenue.

If we have carefully and accurately determined the cost for each service or activity where state law permits a fee or charge, should we seek a charge equal to cost? If our answer is "yes", let us think again. Suppose the City of Peoplesville has recently completed a cost finding study. City officials conclude, on the basis of the analysis of the costs of the municipal skating rink, that it costs $2.00 per skater to operate the facility. This cost finding was based on the following information:

$14,000 (total annual cost) ÷ 7,000 (skaters per year) = $2.00 (per skater)

City officials announce that due to the impact of Proposition 2½, it will be necessary to charge $2.00 per skater to cover the cost of keeping the skating rink open. What happens? A number of people decide not to skate at the rink because the price is too high. As a result, attendance drops to 4,000 for the year and the town must make a supplementary appropriation to cover costs. City officials, in a subsequent cost finding study, determine that because of inflation and regular salary increases, the full cost of operating the skating rink has risen 30%. They set a new charge for the rink based on the following input:

$18,200 (total annual cost) ÷ 4,000 (skaters per year) = $4.55 (per skater)

This represents a 127% increase in the price per skater. When the announcement of the charge is made, there is a public outcry. Why has there been a 127% increase in price, if the cost has only increased 30%? The answer to this question points up several important considerations in pricing municipal services. On a separate piece of paper, write down as many of these considerations as you think may be appropriate to this example.

As the above case illustrates,. sound cost information should not be the sole basis for establishing user charges and fees. There are a variety of factors to be considered in the creation of a pricing schedule for public goods and services. In this chapter, we will walk you through the process of establishing fees and charges, and point out some "real world" considerations associated with the establishment, pricing, and collection of user fees and charges.

This chapter will:

- identify appropriate areas to establish a fee or charge;
- examine some of the considerations in setting a fee or charge;
- explore the methods of establishing a fee or charge; and,
- look at the administrative issues associated with collecting a fee or charge.

Many of you may be considering the establishment of fees and charges for activities and services that your community has always provided for "free". Others may be considering rate increases where fees and charges already exist. Historically, fees and charges have made up a very small percentage of the total revenue picture for the towns and cities of Massachusetts. When fees and charges are permissable under state law, it appears that local governments have been underpricing the cost of delivering the service, or are not excercising the option of charging for the service or activity.

Types of Fees and Charges

Before we describe the types of fees and charges that are available, let us define what we mean by a fee or charge. Although they are subtle, there are distinguishing characteristics between a fee and a charge.

A *fee* is associated with a regulatory device on a private activity in the areas of health, safety, or protection. They are generally recognized to be charges for administrative paperwork or inspection services often associated with the issuance of licenses or permits.

A *charge* can be defined as the amount a town or city receives from the provision of services and commodities, or the perfomance of specific services benefiting the person charged. Charging for public services is similar to the private sector charging for the goods and services it produces or provides. Indeed, a number of services (e.g., golf, trash collection), are provided by both the public and private sector. Unlike the property tax, user charges tend to be voluntary in nature. You pay for the service only when you use it.

Perhaps a subset of charges is *betterments* or *special assessments*. These are charges levied for improvements that benefit certain property owners as opposed to the general public. A sidewalk improvement program is a good illustration of this type of activity. For the remainder of this chapter, we will not further elaborate the fine distinctions between fees and charges.

What Activities Can You Price?

There are a wide variety of services and activities your jurisdiction performs for which you probably are not charging, or perhaps, not charging enough. The public policy issues described in Chapter I provide a broad framework to consider the use of fees and charges as an alternative revenue source.

Historically, fees and charges had limited importance as a source of local revenue. Today, this is not the case. While we present examples of various user fees and charges, it is almost impossible to develop a comprehensive list. It would appear, that within certain guidelines, state law permitting, and the public supporting, towns and cities are developing a diverse array of fees and charges.

To guide your selection of potential services to price, we offer several considerations. First, you must be aware of the effects of fees and charges on municipal operations—e.g., personnel, supplies, equipment, and time allocated among municipal service activities. The following guidelines provide some of the reasons for pricing certain municipal services.

- Fees and charges are most appropriate when substantial waste results if the service is provided free of charge. Think of the abuses that would occur if water was provided free of charge by the municipality.
- Charges should apply to services providing identifiable benefits to consumers. Municipal services in this category might include water and sewer, trash collection, recreation, and parking facilities.
- Special events, sponsored by private concerns, may have significant effects on municipal services. When the municipality provides crowd and traffic control officers for concerts or sporting events, serious consideration should be given to passing those costs along to those sponsoring the event. The sponsor can then include those expenses in the ticket price just as any other price is included. The person **not** attending the event should not subsidize the costs of those who do.
- Pricing will not be appropriate when (a) benefits are received by both users and non-users (it is difficult to price a stroll through the neighborhood park), (b) the service benefits the community as a whole (e.g., police patrols, air pollution control programs), and (c) when the cost of collection will exceed the revenues generated from pricing the service. We will return to this final point later in the chapter.

State Law

Another guideline for pricing is provided by the Massachusetts General Laws, which often set limits on the amount cities and towns may charge for an activity or service. In the last several years, legislative enactments have increased maximum allowable fees and charges in a variety of categories, or authorized municipalities to set fees and charges by the adoption of ordinances and bylaws. The appendix presents the major categories of fees and charges, and describes some of the constraints contained in the General Laws.

Where the law permits or prescribes a specific amount for a fee, license, or permit, an inventory of all fees and charges should be made to compare with the statutory amount. After the initial inventory is conducted, you should review your fee structure at regular intervals. Since the legislature may amend the General Laws periodically, the inventory should be annually reviewed and compared with the Acts and Resolves of the General Court. Exhibit X provides a suggested format to maintain an inventory of fees and charges. Exhibit Y presents a profile to be maintained for a particular charge. If you are charging less than the permissible amount, you may wish to increase the fee. When state law sets a specific dollar amount, you have a standard against which to compare and set your rates.

There are a number of situations which are not as straightforward. As cities and towns seek new charges and fees to diversify their revenue base new approaches will need to be examined. In these situations state law may grant you flexibility to determine the method and the amount (as long as it does not exceed the cost) of the charge. For example, you may have the flexibility to charge everyone using the municipal tennis courts the same amount. You may wish to charge more for those playing tennis at night. (Remember, it cost the town more to operate the court at night because of the lighting.) You may charge more for those who play on the weekends because the courts are usually crowded and you may want to reduce the "peak load". As illustrated in Exhibit Y, the City of Austin, Texas has several methods for calculating the fees for the municipal golf course. Note the pricing schedule incorporates several of the pricing concepts we have discussed.

What Should The Price Be?

As we indicated in Chapter I, there are several variables to consider when pricing public services. They are briefly discussed below to highlight both the policy and practical aspects of a pricing strategy.

- Full cost recovery vs. partial cost recovery—We can recover all our costs (break even) or decide to subsidize the service. At our skating rink, we could charge only $1.00 per skater and encourage more use of the facility. At the same time, we recognize that a larger contribution from the municipality will be required to maintain the service; the costs will not be met by user charges alone.
- Willingness to pay—If the municipality sets too high a price, demand will go down; revenues will be reduced and the citizens may be irritated by steep fees, especially if they are not comparable to similar public or private services.
- Control Demand—A pricing policy should be designed to lessen waste and overconsumption.

EXHIBIT X
City of Peoplesville Fee, License, Permit, Charge Inventory
19___

							Collection History		
Revenue Item	*Statute*	*Administered By*	*Basis*	*State Statutory Limit*	*Town Limit*	*Date of Last Local Change*	19___	19___	19___
Ammunition—Sale	G.L. C. 140, S. 122B	Police Chief		$25	$15	1978			
Amusement Device	G.L. C. 140, S. 177A	Local Licensing Authority		$100	$20	1976			
Dog License (male)	G.L. C. 140, S. 139	Clerk	per dog	$3	set by statute	set by statute			
Dog License (unspayed female)	G.L. C. 140, S. 139	Clerk	per dog	$6	set by statute	set by statute			
Sunday Labor	G.L. C. 136, S. 7	Mayor		$10		1981			
Lunch Carts	G.L. 140, S. 49	Mayor		$100	$100	1981			
....									
....									
etc.									
LOCAL BYLAWS									
Rowboat Rental		Recreation Dept.	per hr.		$2.00	1975			
Tennis		Recreation Dept.	per hr.		$4.00	1979			
Tennis (Saturday)		Recreation Dept.	per hr.		$6.00	1979			
Elder Bus		Council on Aging	per trip		$ .25	1977			
Trash Collection		Public Works Dept.	per household/yearly		$43.00	1981			

EXHIBIT Y
Revenue Summary *

REVENUE ITEM: Golf Course Green Fees
RESPONSIBLE DEPARTMENT: Parks and Recreation

Description: A fee is charged for every round of golf played.
Legal Authorization: (cite local ordinance)

Fee Schedule:

Green Fees		
Regular round (weekends/holidays)	$5.50	*Peakload*
Regular round	5.00	
Evening round	4.00	*Off-Peak*
Senior round (weekdays)	3.00	*Discount/Elderly*
Junior round (weekdays)	2.00	*Discount/Youth*
Early bird round (weekdays)	3.50	*Off-Peak*
Annual Resident Cards		
Individual	$300.00	
2-member family	425.00	
Senior Individual	150.00	*Discount/Elderly*
Senior husband and wife	200.00	*Discount/Elderly*
Junior Individual	75.00	*Discount/Youth*
Summer Cards		
Junior Individual (June 1 - August 31)	$25	*Discount/Seasonal*
Golf Cart Rental	$40.00	
(senior or mobility impaired)	10.00	

Authorized Exemptions: None

Purpose of Revenue: To offset operating expenses

Cost of Service: Revenues pay for two-thirds (2/3) of the operating costs of the golf course.

Trends in Annual Collections: Collections for the past two fiscal years have increased. The benefits of good weather, increased sales of resident cards, and significant improvements in maintaining the course have attracted more patrons. We expect this trend to continue, and we are beginning to attract greater numbers of patrons from surrounding communities.

FISCAL YEAR COLLECTION HISTORY

1974-75	*1975-76*	*1976-77*	*1977-78*	*1978-79*	*1979-80*	*1980-81*
$349,362	$369,288	$353,878	$406,539	$414,649	$456,974	

* *Adapted from City of Austin, Texas Revenue Manual,* May, 1981.

- Social Benefits—Groups and/or individuals may need certain services, and do not have the option to receive the service elsewhere. In such situations, discounts, special rates, or ability-to-pay arrangements may achieve more social benefits than a "one price for all" approach.
- Cost of Delivery—If there are significant capital, time, or material cost differences, based on density and distance for certain services, these factors need to be considered in a comprehensive pricing strategy.

Cost by Type of User

In certain cases, there may be different types or classes of users enjoying the same service. These various classes of users may contribute more or less to the cost of providing the service, and should be charged appropriately. For example, a business or industry may produce more waste than a single family home. Should the homeowner pay the same as the business or industry? In other situations, the cost of the equipment used in performing the service, or the method of providing the service, may vary by type of user. Fire equipment capable of serving high rise structures is more expensive than equipment used exclusively for single-story buildings. Industrial effluent may cost more to treat than residential sewage. The method and time spent collecting refuse at an industrial plant will vary significantly from the single family residence.

Types of Rates

There are a variety of pricing methods available. In selecting the methods most appropriate for a particular service you must ensure that the town has the capacity to establish, collect, and monitor the necessary data. The establishment of a rate that cannot be justified or is built on false assumptions creates a multitude of problems.

Marginal Cost

In looking at rate structure, we must first describe a basic principle—*marginal cost*—which is usually associated with the private sector. Remember our skating rink example at the beginning of the chapter? In a perfect world, the price charged to the skaters should be equal to the cost of offering the service to the last skater. In our example, $2 was the perfect price. However, the demand for skating varies from year to year. So if demand goes up significantly, the cost (margin) of operating the facility goes up. Why? Remember our discussion in Chapter II—certain costs are variable. As demand increases, additional staff and maintenance may be required. These additional (marginal) costs contribute to the cost of operating the rink. Conversely, if demand decreases, these marginal costs must likewise be adjusted downward.

While marginal pricing is most applicable in the private sector, towns and cities must also consider the social benefit cost associated with setting a price for a particular public service. Where there are certain public benefits, you may wish to absorb marginal cost increases, rather than pass them on to the general public.

The specific type of rate structure you employ will be guided by the nature of service you are providing. Typically, large scale municipal enterprises such as water, sewer, and electricity have well defined rate structures. Unfortunately, many of you will be breaking new ground in developing fees for services that were previously "free". As a guide, we shall describe several rate structures.

If we charged everyone the same amount for playing tennis, we are charging a *flat* or *average rate*. A flat rate is a uniform charge to all users. It is the simplest rate structure to establish, and may pose the least problems in gaining public acceptance. To develop a flat rate, we simply divide the cost by the number of users to develop a per unit cost. However, a flat rate does nothing to support the equity and efficiency benefits which user charges make possible. It does not address the issues we spoke of earlier, such as density, distance, ability-to-pay, peak load demands, nor does it help to limit consumption in certain areas. For example, if all households pay a uniform fee for water, there are serious inequities. It would be fairer and more efficient to charge for the service on the basis of the amount of water used. (Note that this may add to collection costs because water meters will be required.) However, if your town does not have the capacity to develop and manage more sophisticated rate structures, the flat rate approach might be the initial way to proceed.

As an alternative to a flat rate charge, there are a number of rate structures which vary the rate charged to the consumer by certain criteria. Let us review the more significant variable rate structures.

The *incremental* fee structure is based on the level of service provided to the individual customer. This fee structure is based on such variables as frequency and volume, or level of effort. For example, downtown merchants may require garbage pick-up four times a week, while residential users require pick-up once a week. In addition, the cost of collection may be high because a greater level of effort is required to collect commercial refuse than residential refuse.

A variation of the incremental fee structure is *measured service*. It provides a means of determining the amount of service rendered either through metering, container tags, etc. For example, it is difficult to charge for residential refuse collection on the basis of volume, although volume is an important influence on costs. Why? It would be impractical to weigh each trash can. As an alternative, the sanitation department may sell stickers which are to be affixed to a can which meets certain size standards. By using this method, we can measure the service by the number of stickers sold.

We can use *marginal pricing* to determine the charge basis. Marginal pricing has two essential elements. First, depending on the service, each new customer is charged for the added cost of providing the service. As such, it may discourage growth in certain areas if new water lines, streets, etc. must be built. Water or sewer hook-up charges are good examples of marginal pricing. Second, the rate increases as consumption increases. This is used to discourage overuse of the facility or service. Water consumption may be priced in this fashion. If too much water is used, an expansion of the system may be required to expand the capacity to pump gallons of water per hour.

A *peakload* rate structure is a form of marginal pricing. It is designed to limit the pressure on the capacity of the facility or service to meet the public demand. Instead of the price increasing with consumption, the price increases when demand is likely to be the greatest. Recreation facilities, as well as public utilities, offer good opportunities for peakload pricing. Another version of peakload pricing is *seasonal* pricing. A higher rate is established where there is heavy seasonal demand for the activity.

A *declining block* rate structure is also a form of marginal pricing. It is usually associated with municipal utilities. As consumption increases, the cost per unit decreases up to a certain level. Then, as consumption continues to increase, the price begins to increase. This approach recognizes that if consumption continues to grow, additional plant capacity may be required.

In certain cases, a jurisdiction may use a *graduated rate* to encourage the use of a service or facility, or to attract industry to the community. In a graduated rate structure, rates go down as consumption increases. This type of structure may represent economies of scale in the production of service.The charge may be lower for groups rather than individuals using the facility. Some jurisdictions may sell water in "blocks" at a cheaper rate.

A *zone* rate structure may be employed where distance from the source of service is a critical variable in the cost of the service. The further someone lives from the source of the service, the greater the charge. Clearly, it costs more to deliver water to low-density, sparsely settled, or newly developed areas. To account for this added cost, a locality may create service areas (zones) and adjust its water rates by service area.

As previously described, rates may be set by category, or *class*, of user. This approach recognizes that it may cost more to provide the same type of service to a different class or type of user.

As was noted in our sanitation department example, the cost to provide refuse collection services to single family homes, apartments, as well as a variety of nonresidential users, differs. These users produce different quantities and types of refuse. Because each type, or class, of user is unique, a rate structure is designed to differentiate the relative cost of meeting each need.

Fee structure may be based on land area. These may serve as proxies for other rate structures that may be difficult to administer. Typical units of measurement include square footage of the entire property, front footage along the street, land value, or a combination of any of these three. For example, the charge for distributing water may, in part, be based on the amount of street frontage each customer occupied. This would be an important factor for large industrial areas. Furthermore, it would lessen the cost of administration since (1)water meters would not have to be installed and, (2) it would not be necessary to hire staff to read meters. Where fees are based on land area, the physical data upon which such charges are based will not change rapidly. Therefore, the administrative cost of calculating and applying such a charge should not be excessive.

Ideally, no activity should have a singular basis for determining its price. The development of a fee structure has three essential elements:

1. Quantity—charge on the amount consumed
2. Capacity—charge on the full cost of producing
3. Location—charge related to density and location

Therefore, a particular service may incorporate elements of a combination of the fee structures described. For example, water supply may incorporate zone (location), peakload (capacity), and amount consumed (quantity).

Exhibit Z illustrates how the various factors we have discussed come together in establishing a sanitation fee. On a separate piece of paper, list the various pricing principles we have described which are illustrated in this example.

Deciding the basis for determining rate structure should be approached with caution. Techniques such as marginal pricing are very sophisticated. Furthermore, complicated pricing schemes may confuse the public and erode public support for a particular fee or charge.

It is important for the policymakers and department heads to balance the pricing principles described earlier in this chapter with an appropriate rate structure. Massachusetts towns and cities, unlike the private sector, are not profit making enterprises. The decision between breaking even and subsidizing certain services as well as determining "who pays for what" are properly decided within each community. Exhibit AA provides a format to consider the implications of various fees and charges on public policy. Rate each fee or charge your community is considering on the basis of the criteria listed at the top. You may wish to add criteria that is appropriate to your jurisdiction. Using this type of document will facilitate dialogue on the pros and cons of individual fees and charges.

Administering The Collection Process

Like any business, our first step should be to determine the market for the public product at a given price. If our analysis indicated that little or no revenue will be generated by an anticipated charge, perhaps we should consider the practice of providing the service for "free." If our analysis indicated that there is a market, we may wish to examine the approaches to insure full cost recovery.

One avenue available to Massachusetts communities through the Uniform Municipal Accounting System (UMAS) is the establishment of an *enterprise fund.* As defined by UMAS:

> *Enterprise funds* are used to account for operations that are financed and operated in a manner similar to private business enterprises—where the intent of the governing is that the costs (expenses, including depreciation) of providing goods or services to the general public on a continuing basis be financed or recovered primarily through user charges, or where the governing body has decided that periodic determination of revenues earned, expenses incurred, and/or net income is appropriated for capital maintenance, public policy, management control, accountability or other purposes. Services accounted for in Enterprise Funds are tangible, and it is ordinarily possible to determine the extent to which they benefit

EXHIBIT Z

City of Midway Sanitation Department
estimated collection time and costs by user class

		Single-Family Residential— Less Than 100 Foot Frontage	Single-Family Residential— More Than 100 Foot Frontage	Apartment Units	Commercial Class I	Commercial Class II
A.	Number of Customers	20,000	5,000	4,000	500	100
B.	Estimated Average Collection Time per Pickup (minutes)	1	1.5	.5	1	2
C.	Collections per Week	2	2	2	3	5
D.	Total Collection Time per Week (B × C)	2	3	1	3	10
E.	Total Collection Time per Week— all customers (A × D)	40,000	15,000	4,000	1,500	1,000
F.	Percentage of Total Collection Time (E as percentage of 61,500)	65%	24%	7%	2%	2%
G.	Allocation of Collection Costs (total annual costs of $800,000 × F)	$520,000	$192,000	$56,000	$16,000	$16,000
H.	Annual Collection Costs per Customer (G ÷ A)	$26	$38	$14	$32	$160
I.	Estimated Average Tons per Customer per Week	.025	.025	.025	1	4
J.	Total Tons per Week (A × I)	500	125	100	500	400
K.	Percentage of Total Tons (J as percentage of 1,625)	31%	7%	6%	31%	25%
L.	Allocation of Haul-Away and Disposal Costs (total annual costs of $500,000 × K)	$155,000	$35,000	$30,000	$155,000	$125,000
M.	Annual Haul-Away and Disposal Cost per Customer (L ÷ A)	$8	$7	$8	$310	$1,250
N.	Fixed Administrative Costs per Customer ($200,000 ÷ total customers in A of 29,600)	$7	$7	$7	$7	$7
O.	Annual Estimated Sanitation Fee (H + M + N)	$41	$52	$29	$349	$1,417

Source: *Making Sense Out of Dollars: Economic Analysis for Local Governments,* National League of Cities (Washington: 1978), p. 92.

EXHIBIT AA

To be marked:

Positive (+)	*Negative* (-)
High Medium Low	High Medium Low

FEES AND CHARGES	EVALUATION CRITERIA											
	New Revenue Capability	Dependability	Ability to Respond to Economic Growth	Ability to Respond to Inflation	Promotes Horizontal Equity	Promotes Vertical Equity	Promotes Use Equity	Promotes Positive Business Climate	Promotes Local Control	Promotes Administrative Simplicity and Efficiency	Requires State/Federal Action	Promotes Public Policy

individual service consumers. (Source: *Massachusetts Uniform Municipal Accounting System for Local Units of Government, 1981.*)

As UMAS becomes fully operative in the Commonwealth's cities and towns, municipal officials will need to consider the potential community benefits of operating enterprise funds for services such as sewer, water, electric or gas utility, hospitals, airports, or recreation programs. Briefly stated, the enterprise could perform the service or function, collect the user charges, and use the revenues for the operation and maintenance of the service. Establishing enterprise funds is a public policy decision requiring sufficient analysis before the decision to operate them can be made. Knowledge of the size of your market (and its potential to increase or decrease), community reaction, the ability of the enterprise to maintain operations on revenues received, and the ability to meet UMAS requirements for operation of the fund should guide your initial deliberations.

When enterprise funds are instituted, and full cost recovery is the goal, it is critical for pricing purposes to record all of the costs related to the enterprise function, including costs incurred by other municipal departments supporting the enterprise. Before implementing an enterprise fund, local officials should consult with the Bureau of Accounts so that all practices and procedures conform to UMAS.

For any service where rates, as opposed to flat charges, will be used to assess costs to consumers, a rate structure should be designed that addresses both the service's revenue needs and the community's ability to support the service. With an established rate structure, the manager should be able to accurately project revenues for a given period of time. Revenue projections are dependent on a number of variables including: mandatory collection, competition with the private sector, projections of building and growth patterns, the availability of account data (number of residential users, number of commercial customers with a given level of service, etc.) and the ability to collect on past due accounts. Where charges are based on consumption, it is necessary to institute procedures to determine how much each user is consuming. This can be expensive, as in the case of installing water meters. In other cases, proxies may be established, e.g., sewage may be a function of water consumed.

The ability to collect fees and provide adequate enforcement powers for delinquent accounts is often a costly aspect of instituting user fees for municipal services. Therefore, the method of collection should relate to the type of service. For example, tennis fees may be collected on site. Other services may require a billing procedure. Some communities have found that billing for water, sewer, and refuse on a monthly basis provides the resident with a convenient billing schedule, while allowing for a centralized billing department (often jointly funded by the contributing utility departments). Each community must determine the cost of collectng the fee or charge, as well as the method of collection. If analysis shows that the expense associated with someone collecting the fee is high in comparison to the amount collected, then an alternative collection method should be devised. For example, tennis permits can be issued, and the tennis courts monitored only during peakload hours. By issuing a permit, we have also reduced the day-to-day problems and costs associated with collecting money on site.

A system of internal control should be established to handle and protect the collection of fees and charges. For example, there should be a separation of duties between the personnel responsible for billing and/or collecting the revenue, and those providing the service or issuing the license or permit. This is a sound internal control. There should be a daily deposit of cash receipts. Use prenumbered receipts, or licenses, to facilitate comparisions between bills and licenses or permits issued.

Once fees or charges have been set, the amount and basis should be published. If there is a collection procedure, it should be specified. When billing procedures are used, there should likewise be a notice of the billing cycle. Where economically feasible, billing and collection systems should be automated.

Finally, a process should be established and responsibility assigned to periodically review the amount for each fee and charge, as well as the rate structure. If a fee modification is considered, it is necessary to study the impact. Impacts should be considered in terms of overall demand, revenue generated, peak load utilization, different population groups, etc., and a determination as to whether a change in legislation is required.

Closing Thoughts

We have discussed a variety of issues associated with pricing public goods and services. To facilitate your ability to develop policies and procedures for implementing a system of fees and charges, Exhibit BB presents a checklist of items to consider when establishing user fees and charges. We suggest you use the list as a guide to implementing a system of user fees and charges.

EXHIBIT BB
Checklist in Considering User Charges*

- Resist subsidizing programs that provide direct benefits to identifiable individuals. Implement user charges.
- Periodically review all user charges to determine the extent to which you are recovering the full cost of providing a service.
- When establishing a price, consider the potential users' ability to pay.
- Before setting a new charge, estimate its revenue producing capability.
- Structure your accounting system so that it provides information on the full cost of all programs. Make sure this information is available to the elected officials, department heads, and citizens.
- Avoid a situation where the public mistakenly believes certain services are "free". The public should be made aware of the full cost of the services provided.
- Undertake an educational program in your community to inform residents that user charges are to subject annual (or sooner) updating depending upon the cost of providing the service.
- Place the responsibility of raising the necessary revenue to implement a new program or the expansion of existing programs on those persons who use the programs.
- Be alert to the fact that services with no charge attached to them may lead to overuse, overcrowding, and waste of the service—ultimately resulting in public pressures to expand the service facilities.
- Consider charging fees to the promoters of sporting, theatrical, or any event that requires the local government to provide traffic control officers or inspections.
- Make sure that citizens urging that user charges not be increased realize that revenue to operate the service must then come from other sources. In such instances, non-users may be subsidizing users.
- Be aware that communities compete with each other to attract new business and industry. If you have too many charges, you may lose your competitive position.
- Consider pricing services based on location to take into account the cost differences caused by distance from treatment plants, disposal sites, pumping stations, etc.
- If certain services are subsidized to meet social goals, be sure the governing body is fully aware of the difference between the revenues received and the full cost of providing services.
- Consider how much it will cost to collect the fee or charge.
- Make sure the fee or charge is legal within state or local statute.
- Be aware that subsidizing a service which could stand on its own may draw needed revenue from other sources which cannot support themselves.
- Keep in mind that user fees provide market signals to government officials on the types of services desired and the quality and the quantity of the service.
- Keep in mind the cost of a service is affected by the location of users, the density of the development at the location of consumption, and the time at which the service is used.
- Property taxes are deductible on federal personal income tax returns—user charges are not.
- Insure that there are adequate internal controls to protect the revenues collected.
- Consider charging for nuisances, such as false burglar and fire alarms, that cost your locality money.
- Keep in mind that consumption may be elastic. As the fee increases, consumption may go down.
- Remember that user fees and charges apply to tax exempt property as well as taxable property.
- Consider holding public hearings prior to establishing or increasing a fee or charge.

* Partially developed from: Department of Commerce and Community Affairs, State of Illinois, *"User Charges—Overlooked Revenue Source,"* May, 1981, pp. 9-10.

V. Management Uses

Up until now, our primary focus has been to develop cost finding methods and pricing strategies to establish fees and charges. However, there are management uses for this data beyond the establishment of an alternative revenue plan. This chapter will focus on some of the possible management uses.

Comparing Results To Plan

Monitoring unit costs to internally set standards allows managers to compare current unit costs to those of prior years. Historical comparisons help to determine how various programs are performing over time. If costs are up and output is down, management must pinpoint trouble spots and take corrective action.

We have described how unit cost data relates what government does (output) to its investment (expenditure). Once we know the cost of producing a unit of service, we have a basis to determine the efficiency of program or departmental operations. Efficiency measurements tell us how well an activity is being carrried out. Because cost finding involves relating dollar cost to output, the results that are obtained will be measured on a "cost per unit" basis.

Chapter II listed several output measures appropriate for setting user fees and charges. These same units may be used to determine program efficiency. (Remember, efficiency does not measure the quality or effectiveness of the service provided.) For example, if the cost per residential unit for trash collection was $41.00 in 1980 and $48.00 in 1981, management should know why this cost increase occurred before it is passed on to the user. Was there a general pay raise? Was major equipment purchased? Was there an increase in employee benefits? Did inflation drive up general operating costs? Answers to these and similar questions give top management a basis to determine the efficiency of the refuse collection program.

Variance analysis is one method used to compare planned output versus actual output. It is the determination of the amount, nature, and cause of differences between planned and actual output. It requires a determination of planned output for each cost element, so that management has a basis to compare "what is" with "what ought to be". For example, a simple illustration of cost variance for a tree planting program may be presented as follows:

	Materials & Labor
Planned budget:	50 trees @ $80/tree = $4,000
Actual budget:	50 trees @ $90/tree = $4,500
Variance:	$500

The above information may be further broken down as shown in Exhibit CC.

From the above analysis, we see that the tree planting program was $500 over budget cost. This increase was based on the additional $10 total cost to plant each tree. Further analysis indicates that cost per tree increased $5, and an additional one-quarter hour of labor was required to plant each tree. Once management has isolated where and why costs have increased or decreased, corrective action can be taken. For example, management may concern itself with why an additional fifteen minutes was required to plant each tree. Is the program operating less efficiently? This may be the case; however more detailed analysis will be necessary.

Suppose management determines that the time required to plant the tree remained the same (1 hour), but labor cost increased (from $20 to $25 per hour), the net cost increase for labor would be the same as the prior example ($5). However, management analysis may determine that an increase in employee benefits was the underlying cause for increased labor cost. In this case, management may conclude that the cost increase is attributable to increased direct overhead, not inefficient program operation.

Because of its reliance on developing and monitoring detailed and accurate planned output, variance analysis requires considerable effort. Since this process may be too rigorous for communities just starting out, we suggest a simpler, if less accurate, method to make comparisons.

A basic format is shown below for comparing costs from year to year.

Unit Cost Comparisons

Tree Planting	*Last Year*	*This Year*	*Next Year*
Cost	$4,000	$4,500	$5,000
Trees Planted	50	50	50
Unit Cost	$80	$90	$100

EXHIBIT CC
Tree Planting Program, Planned and Actual Costs

	Planned Cost/Unit	Actual Cost	Variance
Materials	1 tree @ $60.00 = $60.00	1 tree @ $65.00 = $65.00	$5.00
Labor	1 hour @ $20.00 = $20.00	1¼ hour @ $20.00 = $25.00	$5.00
Total Cost/Unit	*$80.00*	*$90.00*	*$10.00*

If we monitor progress during the year, we may want to list the budgeted amount for each major cost category and compare actual expenses against them. However, such a process would require the implementation of a cost accounting system, since cost finding does not put into place an ongoing process to collect expense information. As an alternative, you may wish to monitor costs using the format provided in Exhibit DD. Collecting this type of information will require the support of department heads and program managers responsible for program operation.

Budget Preparation

Another ongoing managerial concern is the justification of the annual budget. Of all the reasons for monitoring and analyzing costs this may be the most important to your organization.

The data gathered from the original cost finding process together with the data collected during the year provides one basis for developing next year's budget. This data, when used with conventional budgeting techniques, allows you to structure your budget based upon anticipated personnel and equipment needs, projected service levels, and attendant support costs. Projection of revenues from fees and charges when compared to your anticipated expenditures will reflect the "net" outlay required from appropriations.

In some communities, departments are being asked to spend no more than the prior year. Clearly, some departments require more money than last year, and some may be able to perform their functions with less. Unit cost analysis, together with projections of service levels and anticipated revenues, offers a more rational approach to budget deliberations than the incremental and across-the-board level funding approaches traditionally used.

The cost finding process gives us an excellent data base to analyze personnel, equipment, and productivity as well as budgetary impacts of various management decisions.

In Chapter II, we discussed fixed, variable, and semi-variable costs. Because our cost finding analysis gives us a better understanding of how costs "behave" in relation to various outputs, management may be able to determine the full cost impact of various investment decisions.

For example, cost analysis may disclose whether one additional refuse collector increases or decreases the cost per unit of collection. It may show an excessive cost for operating a particular truck, or point out that a new truck will be cheaper than the cost of repairing an existing truck. Or, it may show that modest increases in service delivery will result in dramatic increases in operating expenses.

In this era of reductions in federal aid, cost finding data will provide a basis to determine the full impact of such cuts on service delivery. Furthermore, if the town or city wishes to continue the service, it will have a basis to determine how much additional local investment will be necessary to sustain the service.

Understanding that certain departments share, or have joint, costs in the delivery of a service may help guide the budget allocation process. For example, the recreation department and the public works department may jointly provide personnel and equipment for municipal tennis courts. If a budget cut in the public works department budget diminishes its capacity to provide maintenance and repair of the tennis courts, the recreation department may be prevented from operating a tennis instruction program.

Services Provided By The Private Sector

Increasingly, local governments are looking to the private sector to provide goods and services that were traditionally provided by the public sector. Garbage collection and solid waste disposal, transit systems, as well as police and fire protection offer excellent examples of service areas that are provided by the private sector nationwide.

A community must take into acount many factors when making the decision to contract out for services. For our purposes, one prime consideration will be cost. Can the private sector provide the service at a lower cost than the public sector? Will it be cheaper for the city to "buy" the service than to provide it with its own resources?

Cost finding can help us answer these questions. For example, the XYZ Refuse Company submits a proposal to Peoplesville for the provision of refuse collection at an annual cost of $30 per household. Peoplesville has determined that it costs the sanitation department $41 per household for refuse collection annually. Since there are 18,300 residential units in the City, it would appear that contracting with the XYZ Refuse Company can save the city $201,300 during the first year of the contract.

If the sanitation department was no longer responsible for refuse collection, a series of questions would need to be answered before the final determination of cost saving could be made. For example:

- What are the remaining fixed and semi-fixed costs (e.g., garage maintenance, building insurance, support from other city departments)?
- What are the new costs associated with a private contract (e.g., how will city monitor contract provisions, amount of unemployment compensation for laid-off city employees)?
- Will city equipment be sold? How much could the city expect to receive from the sale? What are the potential insurance savings?
- If trucks are kept and stored for emergency situations, what are the storage and maintenance costs?

If fixed costs, plus costs attendant to the transfer of the service to a private firm exceed $11 per household, it may be less expensive for the Peoplesville Sanitation Department to continue to provide this service. The initial cost savings estimate must be examined together with other appropriate cost finding information to determine the savings resulting from the contracting alternative.

As the above example illustrates, cost finding provides information that can be used for purposes other than establishing prices for public goods and services. Cost finding can be an excellent analytic tool that local officials can use to promote the delivery of cost-effective programs.

EXHIBIT DD
Monthly Cost Report

Month of May, 19___

Department/Program ________________ Manager ________________

Date Received ________________ Date Returned ________________

	Budgeted	*Actual*
DIRECT COSTS:		
Materials		
Direct Labor		
Benefits		
Supplies		
Maintenance		
Total Direct Costs		
INDIRECT COSTS:		
Depreciation		
Support Services		
Other Allocated Costs		
Total Indirect Costs		
TOTAL COSTS		

Comments and explanations: ____

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Appendix

GENERAL LAWS

Analysis of licenses, permits, fees and charges requires a review of many sections of the General Laws. A starting point for this examination has been provided in the Appendix. The data included is not comprehensive, and officials should carefully check the statutes to ensure accuracy of the information provided and to avoid missing recent legislative changes. Local legal counsel should review any proposed fee increases to ensure statutory maximums are not exceeded, and procedural requirements and safeguards are followed.

A comprehensive inventory of fees and charges may be found in *"Using User Fees: A Guide for Massachusetts Cities and Towns"* a joint publication of the University of Massachusetts Cooperative Extension Service and the Massachusetts Municipal Association.

City and Town Clerks

General Law, Chapter 262, Section 34, authorizes cities and towns through the enactment of bylaws and ordinances to set the fees of city and town clerks. If the city or town does not establish fees and charges, the state statutory amounts remain in effect.

Regulation of Carriages and Vehicles (taxicabs)

General Law, Chapter 40, Section 22, allows a city or town to make ordinances or bylaws, or the board of aldermen, selectmen, and town council may make rules and regulations for the regulation of carriages and vehicles, and may set penalties for violations, and establish an annual fee for each license.

Fees for Signs, Awnings

General Law, Chapter 85, Section 8, allows municipal governments to grant permits and fix fees for placing and maintaining ". . . signs, advertising devices, clocks, marquees, public telephones, telephone booths, and other appurtenances thereto, permanent awnings and other like structures projecting into or placed on or over public ways . . ." See the limitations on this power in G.L. c. 85, s. 9.

Licenses for Auctioneers

General Laws, Chapter 100, Section 2, provides that the city or town licensing authority may set a license fee to license an inhabitant of a municipality to be an auctioneer for one year. The local licensing authority may also set the fee and issue special licenses to a noninhabitant to be an auctioneer for the days specified in the license. See statute for details.

Land Use

General Law, Chapter 41, Sections 81A through 81 GG, The Subdivision Control Law, specifies in Section 81T, that the cost of advertisement for a public hearing on a definitive subdivision plan shall be at the expense of the applicant. No such express authorization is given for public hearing expenses under Chapter 40A, The Zoning Act, but perhaps it could be implied, if at all, from Section 11. Neither is there express authorization for other costs such as plan submissions, reviews, and engineering inspections under the Subdivision Control Law, nor for variance, special permit or appeal applications under the Zoning Act. Therefore, such charges, if any are proper, must be implied from Chapter 41, Sections 81A through 81GG or Chapter 40A. Such charges are not permissible if they amount to a form of taxation, but would probably be allowable if they are reasonably related to the cost by the city or town of providing services for the applicant and the benefit received by the applicant.

The chart presented on the following pages lists the major statutory citations for local fees, permits and charges.

Statutory Citations for Major Local Fees, Permits, and Charges

Revenue Items	*Statute Massachusetts General Laws Chapter & Section*	*Administered By*	*Statutory Maximum*	*Municipal Limit*	*Date of Last Change*	*Comments*
Alcoholic Beverages						
clubs	c. 138, s. 12, 12A	LLA	$200*			
druggists	c. 138, s. 30A	LLA	$100 - $600*			
package store (beer, wine)	c. 138, s. 15	LLA	$150 - 1,500*			
package store (all alcoholic)	c. 138, s. 15	LLA	$200 - $1,000*			
Ammunition—sale	c. 140, s. 122B	PC	$25*			
Automatic amusement devices	c. 140, s. 177A	LLA	$10 - $100*			
Auto—Dealership	c. 140, s. 59	LLA	$100*			
Beverages—nonalcoholic sale	c. 140, s. 21B	LLA	$25*			
Beverages—nonalcoholic bottling	c. 94, s. 10A, 10B	LLA	$20			
Bicycle—registration	c. 85, s. 11A	PC	$.25 - $2.50			
Billiard tables	c. 140, s. 177, 202	LLA	at least $2			
Boat rentals	c. 140, s. 192	LLA	$20			
Bowling alleys	c. 140, s. 177, 202	LLA	at least $2			
Building permit	See State Building Code					
Charitable purposes—sales	c. 101, s. 33	S	$10*			
Dog license—male, female spayed	c. 140, s. 139, 147	CLK	$3 (partially retained)			
Dog License—female	c. 140, s. 139, 147	CLK	$6 (partially retained)			
Dog license—kennel	c. 140, s. 137A	CLK	Fee scale			
Dogs impounded	c. 49, s. 26		$1.50/day (with license) $2.00/day (without license)			
Explosives, inflamable materials—storage	c. 148, s. 13	LLA/FC	no limit*			
Explosives, inflamable materials—various licenses	c. 140, s. 10A	FC	$5 - $10*			
Firearms—carrying permit	c. 140, s. 131E, s. 131G, s. 131A	PC	$10			
Firearms—identification	c. 140, s. 129B	LLA	$2			
Firearms—sale	c. 140, s. 122	PC	$20			

Revenue Items	*Statute Massachusetts General Laws Chapter & Section*	*Administered By*	*Statutory Maximum*	*Municipal Limit*	*Date of Last Change*	*Comments*
Fish and game	c. 130 s. 52, 57 c. 131, s., 11, 17	CLK	See Statute			
Fortune tellers	c. 140, s. 185I	LLA	$50			
Gas tank—removal, relocation	c. 148, s. 13	FC	$200*			
Hawkers and peddlers	c. 101, s. 5	LLA	$25			
Holidays—sporting tourist, events	c. 136, s. 14	M/S	$20/event* $400/year*			
Holiday & Sunday work permits	c. 136, s. 7, 15	M/S	$10			
Innholders/common Victuallers	c. 140, s. 2	CC/S	$25 - $50*			
Lodging houses	c. 140, s. 23	LLA	$50*			
Lunch carts	c. 140, s. 49	CC/S	$100*			
Milk inspection	c. 94, s. 41	B of H	$10*			
Milk pasteurizing plant inspection	c. 94, s. 48A	B of H	$40*			
Mobile homes	c. 140, s. 32B	B of H	$10 - $50*			
Pawnbroker	c. 140, s. 77	LLA	$100*			
Plumber, master	c. 142s. 6	B of H	$20			
Raffles, bazaars	c. 271, s. 7A	PC/CLK				
Uniform commercial code filings	c. 106, s. 9 - 403	CLK	$10*			

KEY

B of H	Board of Health
c.	chapter (of Mass. General Laws)
CC	City Council/Board of Aldermen
CLK	City or Town Clerk
FC	Fire Chief
LLA	Local Licensing Authority
M	Mayor
PC	Police Chief
s.	section (within chapter of Mass. General Laws)
S	Board of Selectmen
*	Flexibility to fix fees within limits at the local level. (Consult statute for procedures to be followed.)

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NOTES